BUREAU OF RECLAMATION

Draft Environmental Assessment for the Grandview Canal Middle & Lower Piping Project

Basinwide Salinity Control Program
Upper Colorado Basin: Interior Region 7
Western Colorado Area Office

U.S. Department of the Interior

April 2025

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Draft Environmental Assessment for the Grandview Canal Middle & Lower Piping Project

Basinwide Salinity Control Program
Upper Colorado Basin: Interior Region 7
Western Colorado Area Office

Prepared for the Bureau of Reclamation by
Rare Earth Science, LLC

April 2025

Cover Photo: Middle Project Segment of the Grandview Canal, April 2022, Delta County, Colorado. (Rare Earth Science, LLC).

Table of Contents

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1 - INTRODUCTION

This Environmental Assessment (EA) has been prepared to explain and evaluate the potential environmental effects of Grandview Canal and Irrigation Company's (GCIC's) proposed Grandview Canal Middle and Lower Piping Project and a Lining Alternative. The Piping Alternative ("Project") is the Preferred Alternative. The Federal action ("Proposed Action") evaluated in this EA is whether the Bureau of Reclamation ("Reclamation") would provide funding assistance to GCIC (the "Applicant") for the Project. Reclamation is authorized by the Colorado River Basin Salinity Control Act's Colorado River Basinwide Salinity Control Program to fund the Project under the 2020 Funding Opportunity Announcement (FOA) BOR-UC-20-F001.

Reclamation has prepared this EA in compliance with the National Environmental Policy Act (NEPA) and the Department of the Interior's NEPA regulations at 43 C.F.R. §§ 46.10-46.450. If potentially significant impacts to environmental resources are identified, an Environmental Impact Statement (EIS) will be prepared. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) will be issued.

1.1 – Project Location and Legal Description

The Project is located in southeast Delta County, near the Town of Crawford, Colorado (see Figure 1, below).

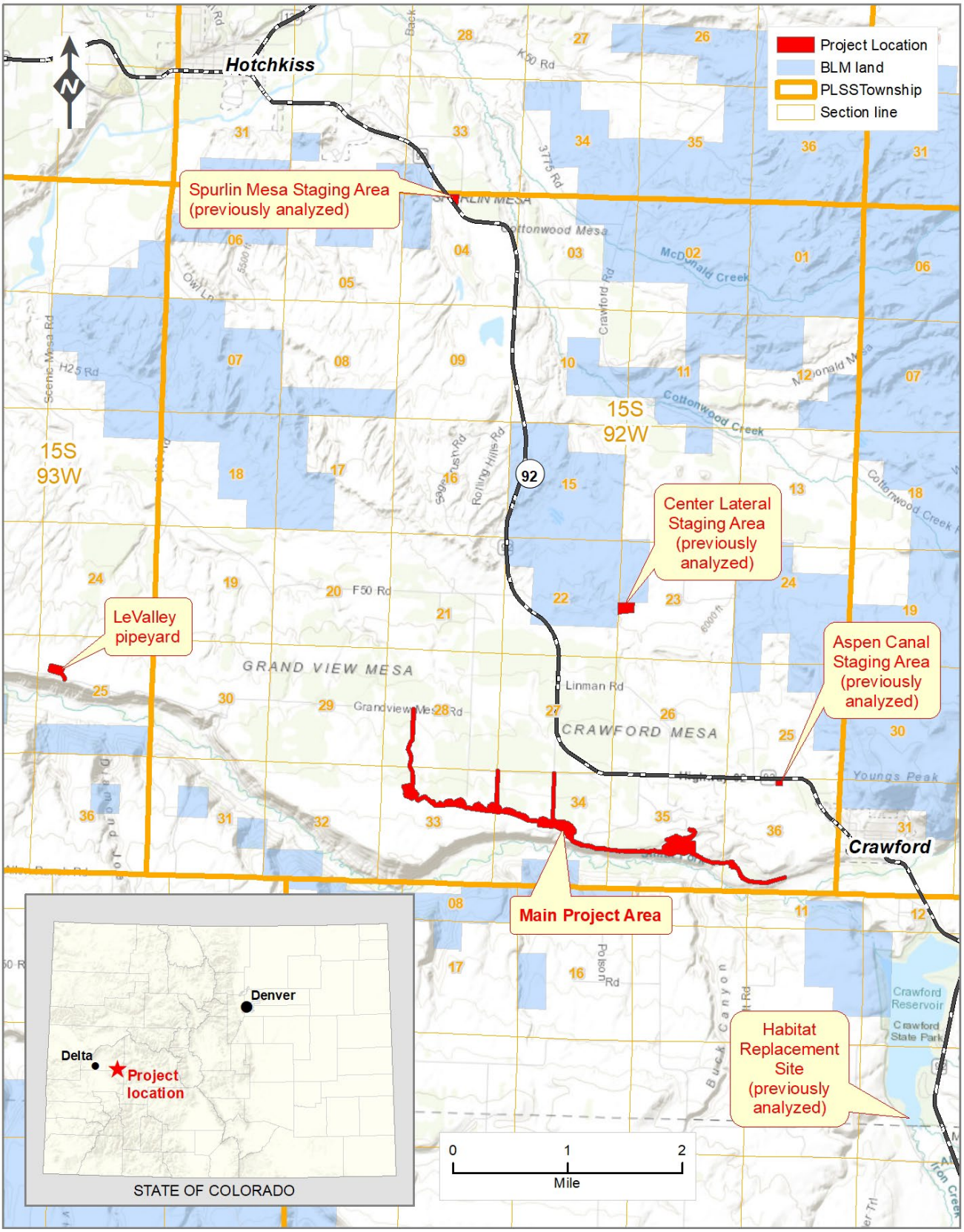
The piping component of the Project is in the local geographic areas of Grandview Mesa and the lower Smith Fork drainage, and extends from an area approximately 0.5 mile southwest of the Town of Crawford to about 4 miles west of the Town of Crawford. Other sites involved with the Project are materials staging areas not in the immediate vicinity of the proposed pipeline alignment. The piping component and the staging areas for the Project lie entirely on private land. The areas that would be affected by the Project (the "Project Areas") and their general physical locations are summarized in Table 1.

An existing habitat replacement site developed for a previous GCIC project (the original Grandview Canal Piping Project completed in 2010) generated excess habitat credits that would be applied to the current Project. The existing habitat replacement site is on Reclamation-owned land administered by Crawford Reservoir State Park in the location shown on Figure 1. No physical activity directly related to the Project would take place at the habitat replacement site.

Table 1. Areas Involved in the Project

Project Area	Specific Project Element or Activity	General Physical Location	Previous Analyses Incorporated by Reference
Main Project Area	The piping component: middle and lower segments of that part of Grandview Canal involved with the Project (including access ways)	Crawford and Grandview Mesas. T15S R92W of the 6th PM: Sections 28, 33, 34, 35, 36, all in Delta County.	--
LeValley Staging Area	Staging area for supplies and equipment during construction	Western area of Grandview Mesa. T15S R93W 6th PM. Section 25, in Delta County.	--
Aspen Canal Staging Area	Staging area for supplies and equipment during construction	Crawford Mesa. T15S R92W of the 6th PM: Section 36, in Delta County.	The "Aspen Canal Staging Area" in the general physical location of this Project Area was previously analyzed and authorized as part of the Aspen Canal Piping Project (see Section 1.6).
Spurlin Mesa Staging Area	Staging area for supplies and equipment during construction	Spurlin Mesa. T15S R92W of the 6th PM: Section 4, in Delta County.	The "Spurlin Mesa Staging Area" was previously analyzed and authorized as part of the Clipper Center Lateral Piping Project (see Section 1.6).
Center Lateral Staging Area	Material for pipe bedding, if needed	T15S R92W of the 6th PM: Section 23, in Delta County.	The "Center Lateral Staging Area" was previously analyzed and authorized as part of the Clipper Center Lateral Piping Project (see Section 1.6).
Existing Habitat Replacement Site	No physical activity directly related to the Project would take place at this site	T51N R7W of the New Mexico PM: Section 24, Delta County.	The habitat replacement site was developed for the original Grandview Canal Pipeline Project. Excess habitat credits generated at the site would be applied to the current Project (see Section 2.2.8).

Figure 1. Map of project location.



1.2 - Need for and Purpose of the Proposed Action

The need and purpose for the Proposed Action is to reduce salinity concentrations in the Colorado River basin, in compliance with the Colorado River Basin Salinity Control Act of 1974, 43 U.S.C. §§ 1571, et seq., as amended).

1.3 – Decision to be Made

Reclamation will decide whether to provide funding to the Applicant to implement the Project.

1.4 – Background

1.4.1 – Salinity Control Program

The threat of salinity loading in the Colorado River basin is a major concern in both the United States and Mexico (Reclamation 2019a). Salinity affects water quality, which in turn affects downstream users, by threatening the productivity of crops, degrading wildlife habitat, and corroding residential and municipal plumbing. Irrigated agriculture contributes approximately 37 percent of the salinity in the system (Reclamation 2019a). Irrigation increases salinity in the system both by depleting in-stream flows, and by mobilizing salts found in underlying geologic formations into the system, especially during flood irrigation practices.

The Colorado River Basin Salinity Control Act of 1974 authorizes the Secretary of the Interior to proceed with a program to enhance and protect the quality of water available in the Colorado River for use in the United States and Republic of Mexico. Public Law 104-20 of July 28, 1995, authorizes the Secretary of the Interior, acting through the Bureau of Reclamation, to implement a Basinwide Salinity Control Program. The Secretary may carry out the purposes of this legislation directly, or make grants, enter into contracts, memoranda of agreement, commitments for grants, cooperative agreements, or advances of funds to non-federal entities under such terms and conditions as the Secretary may require (43 U.S.C. § 1592).

The Basinwide Salinity Control Program funds salinity control projects with a one-time grant that is limited to an applicant's competitive bid. Salinity control projects are awarded based on applications received in response to a Notice of Funding Opportunity (NOFO) (formerly called Funding Opportunity Announcement [FOA]) issued by Reclamation. As part of the NOFO, applicants are evaluated individually according to the following criteria: cost effectiveness, ability to enable on-farm salinity control features, risk assessment, detailed project plan, costs & capability to implement the project, future operation & maintenance and management capabilities for the project, past performance, and Department of the Interior goals. Applications are ranked by an Application Review Committee made up of multiple disciplines, and high-ranking projects are recommended to the Salinity Control Program Manager for consideration. The Salinity Control Program Manager then provides recommendations to the Grants Officer for award. Once constructed, the facilities are operated, maintained, and replaced by the Applicant at their own expense.

The cost effectiveness value of a proposed project is quantified as the estimated total annual salt load (in tons) reduced in the Colorado River basin divided by the project cost amortized over 50

years. Estimated salinity reduction is calculated based on measured total dissolved solids loads in basin streams, GIS-based model calculations to determine subbasin loads, and ditch mapping data that include average flows, ditch lengths, and average annual days of use. Richards et al. (2014), Schaffrath (2012), and Linard (2013) provide more detailed information on salt loading estimate methodology.

Earthen irrigation ditch water seepage and the resultant deep percolation through saline soils is one way that salts are mobilized and transported into regional streams and rivers. Piping such ditches removes a source of deep percolation and salt mobilization to regional streams and rivers from the system. The Project would eliminate water seepage from approximately 4 miles of earthen ditches, reducing salinity loading by 4,421 tons per year (Reclamation 2020a) in the Lower Gunnison Basin and the Colorado River Basin.

While the Project is not a selenium reduction project, it is anticipated that an unquantified reduction in selenium loading in the Colorado River basin would also be associated with the Project. The U.S. Geological Survey (USGS) monitors dissolved selenium loads in rivers and tributaries immediately downstream of the Project Area. There has been a 47.7 percent decrease in selenium levels in the Gunnison River near Whitewater between 1986 and 2020 (Henneberg 2021). The Gunnison Basin Selenium Management Program (SMP), a private/public partnership of concerned parties working together to identify and implement solutions to reduce selenium concentrations in the Gunnison and Colorado rivers, attributes a portion of the reduction in selenium throughout the area to the reduction of deep percolation from seeping irrigation ditches due to the implementation of salinity control projects (Reclamation 2020b, 2022).

1.4.2 – The Applicant

GCIC, the Applicant, is a privately owned, non-profit, mutually-funded irrigation company incorporated and operating in Delta County since 1922. The Grandview Canal system originates at a head gate on the Smith Fork River at a location just south of the Town of Crawford, and provides users with irrigation water and winter stock water across Grandview and Scenic Mesas. Late season water called from Crawford Reservoir is also delivered in the Grandview Canal system. The irrigated crops associated with the system include hay crops and grass pasture.

1.5 – Relationship to Other Projects

1.5.1 – Salinity Control Program

Reclamation, under the authority of the Colorado River Basin Salinity Control Act of 1974 provides funding through the Basinwide Salinity Control Program and the Basin States Program to implement cost-effective salinity control projects in the Colorado River Basin. Reclamation's Western Colorado Area Office is the process of or has recently utilized Salinity Control Program funds for the following salinity control projects in the vicinity of the Project Area (Figure 2, below):

- Bostwick Park Siphon Lateral Piping Project
- C Ditch/Needle Rock Piping Project
- Cattleman's Ditches Piping Project Phases I and II
- Clipper Center Lateral Piping Project and Project A
- Crawford Clipper Ditch Company's Jerdon/West/Hamilton Piping Project

- Eastside Laterals Piping Projects ("UVWUA Project 9" and "UVWUA Project 10")
- Fire Mountain Canal Piping Project
- Forked Tongue/Holman Ditch Piping Project
- Gould Canal Improvement Projects A & B
- Grandview Canal Piping Project (original)
- Upper and Lower Stewart Ditch Piping Projects
- Minnesota Canal Piping Project Phase I and II
- Minnesota L75 Piping Project
- Needle Rock-Lone Rock Piping Project
- North Delta Canal Piping Project
- Orchard Ranch Piping Project
- Pilot Rock Ditch Piping Project
- Short Ditch Extension Piping Project
- Slack and Patterson Lateral Piping Project
- Spurlin Mesa Lateral Piping Project ("Clipper Project 4")
- Turner-Lone Cabin Combination Piping Project
- Waterdog and Shinn Park Laterals Piping Project
- Zanni Lateral Piping Project

1.5.2 – CRSP Funds

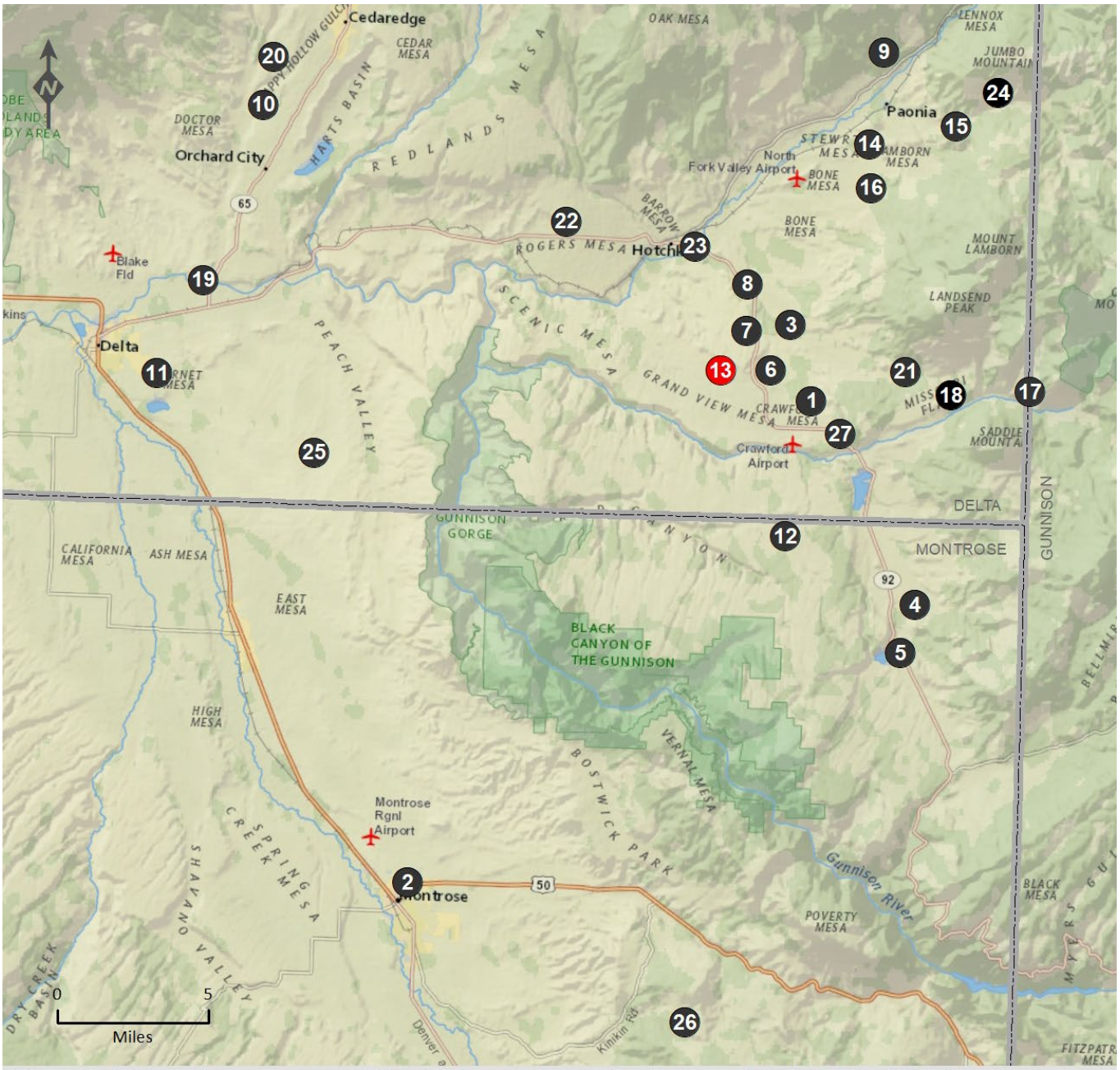
Reclamation's Western Colorado Area Office recently utilized Colorado River Storage Project (CRSP) Funds to implement the Aspen Canal Piping Project and the GK Lateral Piping Project in the vicinity of the Project Area (Figure 2).

1.5.3 – RCPP Funds

The U.S. Dept. of Agriculture Natural Resources Conservation Service (NRCS) issued a Regional Conservation Partnership Program (RCPP) grant administered by the Colorado River Water Conservation District under the Lower Gunnison Watershed Plan. RCPP irrigation infrastructure improvement projects planned in the vicinity of the Project Area include (Figure 2):

- Needle Rock Diversion Project
- Grandview Upper Canal Piping Project
- Crawford Clipper Ditch Upper West Lateral Master Plan Projects (various)

Figure 2. Regional salinity control projects & other related projects.



1 Aspen Canal Piping Project	10 Forked Tongue/Holman Ditch Project	19 North Delta Canal Piping Project
2 Bostwick Park Salinity Control Project	11 GK Lateral Piping Project	20 Orchard Ranch Piping Project
3 C Ditch/Needle Rock Pipeline Project	12 Gould Canal Improvement Projects A & B	21 Pilot Rock Ditch Piping Project
4 Cattlemans Ditches Pipeline Project Phase I	**13 Grandview Canal Piping Projects**	22 Rogers Mesa WDA Slack & Patterson Laterals
5 Cattlemans Ditches Pipeline Project Phase II	14 Lower & Upper Steward Ditch Pipelines	23 Short Ditch Extension Piping Project
6 Clipper Center Lateral Piping Project	15 Minnesota Canal & Reservoir Projects I & II	24 Turner/Lone Cabin Combination Piping Project
7 Clipper Jerdon-West-Hamilton Piping	16 Minnesota L75 Piping Project	25 UVWUA Phases 9 & 10
8 Crawford Clipper Project 4	17 Needle Rock Diversion Project	26 Waterdog & Shinn Park Laterals Piping Project
9 Fire Mountain Canal Piping Project	18 Needle Rock/Lone Rock Piping Project	27 Zanni Lateral Pipeline Project

1.6 – NEPA Sufficiency Review for Certain Project Features

Certain areas and activities have already been analyzed and authorized under the NEPA process for related projects, and are proposed for continuing use under the current Project. These include the Aspen Canal Staging Area, the Spurlin Mesa Staging Area, and the Center Lateral Staging Area (itemized in Table 1, above, and in the following paragraphs). These continuing use areas and related activities are included in the Proposed Action description (Section 2.2), but are not analyzed in Chapter 3 (Affected Environment & Environmental Consequences). Instead, the EAs covering these features and activities are incorporated here by reference. As required by 42 U.S.C. 4336b, Reclamation re-evaluated each of the prior NEPA documents to ensure that the analysis remains valid for the current Project. Reclamation determined that the existing analyses remain valid, with updated information related to species listed under the U.S. Endangered Species Act for each area. Since the times of the original NEPA analyses, the gray wolf and the silverspot have been listed under the U.S. Endangered Species Act. Reclamation determined that none of these continuing use areas include suitable habitat or occurrences of gray wolf or silverspot, and the Applicant does not have a predator management program that would affect gray wolf. Therefore, there would be no potential for Project activities at these continuing use areas to affect gray wolf or silverspot, and the analyses disclosed in the previous NEPA documentation are still adequate.

The Aspen Canal Staging Area was used as a staging area for Reclamation's Aspen Canal Piping Project and is currently proposed for that same use. No change in use would occur under the current Project which would change the environmental analysis contained in the 2019 EA for the Aspen Canal Piping Project (Reclamation 2019b), which is incorporated here by reference. A FONSI was signed by the WCAO on February 27, 2019, documenting that there would be no significant impact resulting from utilizing this area for staging.

The Center Lateral Staging Area was used as a staging area for soil stockpiles generated during the Clipper Center Lateral Piping Project, and these soil stockpiles are currently proposed for use as pipe bedding (if necessary) for the Project. No change in use would occur under the current Project which would change the environmental analysis contained in the Clipper Center Lateral Piping Project EA (Reclamation 2019c), which is incorporated here by reference. A FONSI was signed by the WCAO on October 18, 2019, documenting that there would be no significant impact resulting from utilizing this area for staging.

The Spurlin Mesa Staging Area was used as a staging area for Clipper Irrigation Salinity Control Project 4 and the Clipper Center Lateral Piping Project, and is currently proposed for that same use. No change in use would occur under the current Project which would change the environmental analysis contained in the 2014 EA for the Clipper Irrigation Salinity Control Project 4 (Reclamation 2014) or the Documentation of NEPA Adequacy for the Clipper Center Lateral Piping Project (Reclamation 2019d) which are incorporated here by reference. A FONSI was signed by the WCAO on April 25, 2014, documenting that there would be no significant impact resulting from utilizing this area for staging.

1.7 - Scoping

Scoping for this EA was completed by Reclamation, in consultation with the following agencies and organizations, during the planning stages of the Project to identify the potential environmental and human environment issues and concerns associated with implementation of the Proposed Action and No Action Alternatives:

- U.S. Bureau of Land Management, Uncompahgre Field Office, Montrose, CO
- Colorado State Historic Preservation Office, Denver, CO
- U.S. Army Corps of Engineers, Northwestern Colorado Branch, Grand Junction, CO
- Southern Ute Tribe, Ute Mountain Ute Tribe, and Ute Indian Tribe (Uintah and Ouray Reservation)
- U.S. Fish & Wildlife Service, Ecological Services, Grand Junction, CO
- Colorado Parks & Wildlife, Grand Junction, CO

Concerns raised during public comment periods on recent similar projects and related informal consultations with Colorado Parks and Wildlife, Gunnison, Colorado, also helped identify potential concerns for the Project.

Resources analyzed in this EA are discussed in Chapter 3. The following resources were identified as ***not present or not affected***, and are not analyzed further in this EA[1]:

[1] Executive Order 14154, *Unleashing American Energy* (Jan. 20, 2025), and a Presidential Memorandum, *Ending Illegal Discrimination and Restoring Merit-Based Opportunity* (Jan. 21, 2025), require the Department to strictly adhere to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. Further, such Order and Memorandum repeal Executive Orders 12898 (Feb. 11, 1994) and 14096 (Apr. 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. The [bureau] verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 C.F.R. Part 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum. The [bureau] has also voluntarily considered the Council on Environmental Quality's rescinded regulations implementing NEPA, previously found at 40 C.F.R. Parts 1500–1508, as guidance to the extent appropriate and consistent with the requirements of NEPA and Executive Order 14154.

Table 2. Resources Eliminated from Further Analysis

Resource	Rationale for Elimination from Further Analysis
Indian Trust Assets and Native American Religious Concerns	No Indian trust assets have been identified within the Project Area. No Native American sacred sites were identified within the Project Area. Neither the No Action Alternative, nor the Action Alternatives, would affect Indian trust assets or Native American sacred sites. To confirm this finding, Reclamation provided the Ute Mountain Ute Tribe, the Ute Indian Tribe (Uintah and Ouray Reservation), and the Southern Ute Indian Tribe with a description of the Project and a written request for comments regarding any potential effects on Indian trust assets or Native American sacred sites. No comments were received.
Wild & Scenic Rivers, Land with Wilderness Characteristics, or Wilderness Study Areas	No Wild and Scenic Rivers, land with wilderness characteristics, or Wilderness Study Areas exist in the Project Area. Therefore, neither the No Action Alternative nor the Action Alternatives, would have an effect on these resources.
Public lands grazing and recreation	No public lands are involved with the Project. Therefore, neither the No Action Alternative, nor the Action Alternatives, would have an effect on public lands grazing or recreation.

CHAPTER 2 - ALTERNATIVES

Alternatives evaluated in this EA include the No Action Alternative, the Piping Alternative (aka "Project," the Preferred Alternative), and the Lining Alternative.

2.1 – No Action Alternative

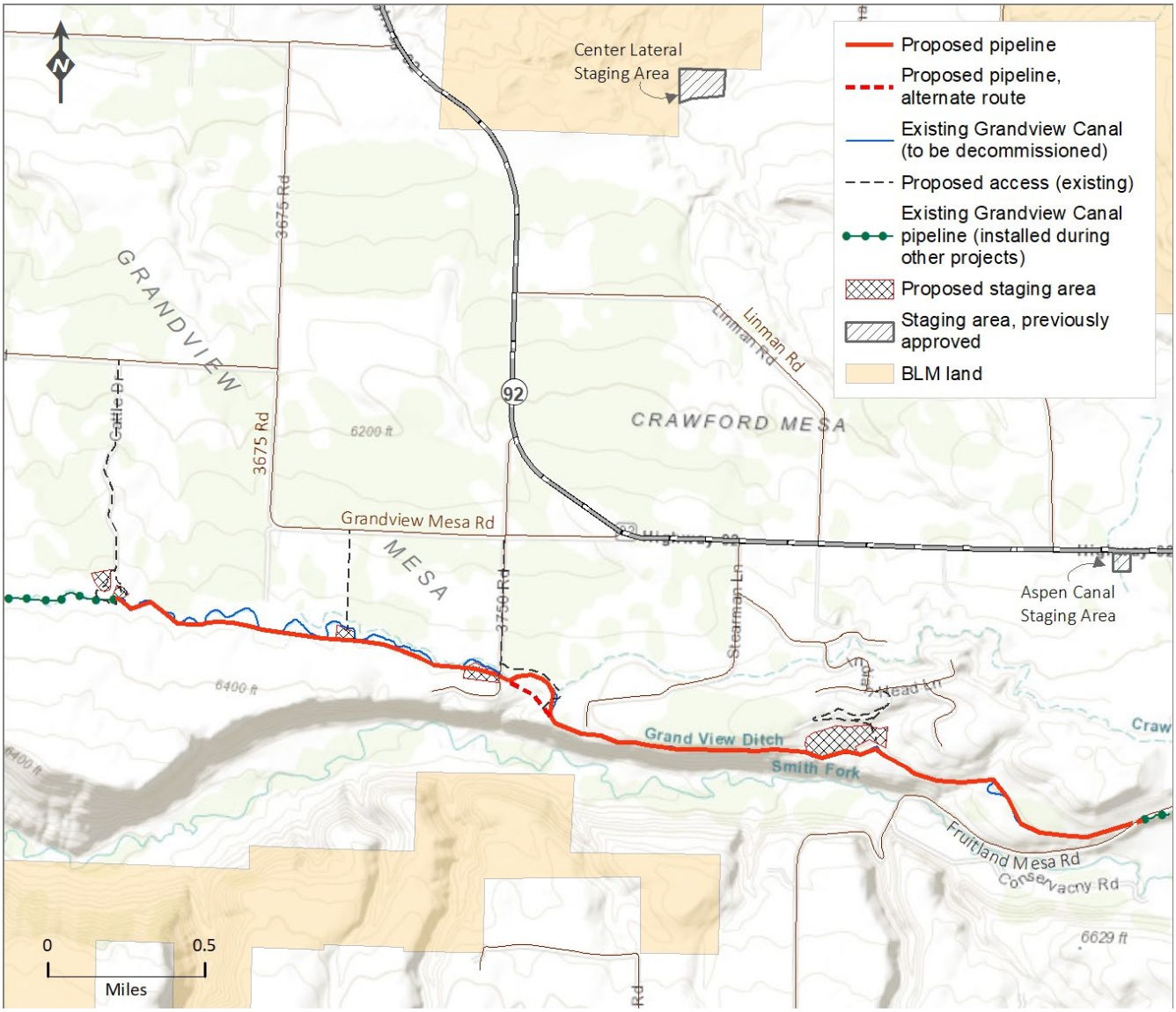
Under the No Action Alternative, Reclamation would not approve funding for the Project. The ditches proposed for piping would continue to flow in open, earthen ditches, and the resultant salt loading to the Lower Gunnison Basin and the Colorado River Basin would continue at the current rate. Without a change in the existing environment (i.e. *an action*, such as other remedial measures with the potential to reduce salt loading associated with the ditches), salt loading associated with the ditches proposed for piping would continue at the current rate. There are no known actions/remedial salinity control measures planned to occur which would impact the salt loading

associated with the ditches proposed for piping at this time, and therefore the No Action Alternative does not include other potential salinity control measures in the area.

2.2 – Piping Alternative – Preferred Alternative

Under the Proposed Action, Reclamation would authorize funding to the Applicant to implement the Grandview Canal Middle and Lower Piping Project ("Project") as the Preferred Alternative. The Project would include converting approximately 4 miles of open irrigation ditch to buried pipeline (the "piping component"). The proposed pipeline is sketched on (Figure 3), along with proposed construction access routes and staging areas.

Figure 3. Main project area plan.



Overall, approximately 3.7 miles of buried pipeline would result from the Project. The proposed pipeline would follow the existing ditch prism in most locations, and would be realigned outside the ditch prism in some areas to shorten the piped distance. A total of approximately 1.5 miles of existing ditch segments would be abandoned.

The upstream (east) connection of the current Project would connect to piping installed in 2021 as part of the Upper Grandview Piping Project funded by RCPP, and the downstream (west) end of the current Project would connect to piping installed in 2012 at a point 4 miles west of Crawford for the original Grandview Canal Piping Project (Figure 3).

The Project would start about 200 feet east of where the Grandview Canal crosses under Fruitland Mesa Road and proceed west. The first 200 feet of the pipeline would consist of dual 42-inch pipes (to match the existing upstream pipe) installed in the existing canal prism. Just upstream of the Fruitland Mesa Road crossing, the dual pipes would end and a concrete box would be installed allowing water to flow open beneath the Fruitland Mesa Road bridge for a length of about 80 feet (40 feet on either side of the road's centerline). West of the Fruitland Mesa Road bridge, a concrete box and cleanout structure would be installed, and the canal would transition to a single 60-inch diameter pipe.

The 60-inch diameter pipe would continue mostly in the existing canal prism for about 2.1 miles, contouring along the south-facing slope of Smith Fork canyon to the southwest edge of Crawford Mesa. There, the existing canal makes a sharp turn to the north and drops in elevation in the "waterfall area," marking the transition to Grandview Mesa, and the Middle Section to the Lower Section of the Project. The existing canal in the "waterfall area" is about 600 feet in length, and bordered by riparian vegetation. The pipeline would bypass this area to the south, using one of two proposed routes, and a flush valve would be installed to release water as needed to the "waterfall area," to maintain the existing riparian vegetation at that location. Overflow from a nearby constructed pond would also contribute water to the "waterfall area." Flows in the "waterfall area" would be slowed and pooled using rock structures and would terminate in a wet area at the base of the mesa. The pipeline bypass around the "waterfall area" would either parallel the south side of the existing ditch prism in a broad arc, or follow a straighter alternate route that is approximately 400 feet shorter in length (Figure 3), but with a drop in elevation that would require a sediment flush valve at the low point.

The Lower Section of the pipeline would extend west about 1.8 mile to the end of the Project, transitioning from a 60-inch diameter pipe down to a 48-inch diameter pipe. A 2-inch diameter winter stock water pressurized pipeline would be placed in the Lower Section trench alongside the main pipeline for a distance about 1.2 mile. Along the Lower Section, the piped corridor would be straightened and would deviate from the existing canal prism in several locations (Figure 3). This deviation would be for ease of construction and integrity of the pipe.

At the west (terminal) end of the Project (about 4 miles west of Crawford), the pipeline would enter a concrete hydraulic lift box. The hydraulic lift box would be constructed to tie into an existing concrete structure and the section of pipeline installed in 2012 during the original Grandview Canal Piping Project.

The pipeline would be constructed of high-performance polypropylene storm construction pipe (primarily 60-inch diameter), and poly-vinyl chloride (PVC) (48-inch diameter). A variety of control

structures (valves, air vents, meters, etc.) and outlets (farm turnouts), as well as an emergency overflow structure (that would release water to the Smith Fork), would be installed on the pipeline. No pump stations, compressor stations, or new irrigated farm areas would be associated with the Proposed Action.

Table 3, below, is a summary of project elements (distances and estimated acreages involved are approximate). Distances of pipeline given in Table 3 are disturbance footprints, not linear distances of pipelines, because in some areas, multiple pipes (main pipes along with shareholder delivery lines) would be installed in the same trench. These elements were compiled from a review of the engineer's construction design drawings and a GIS analysis using Esri® ArcGIS Desktop software.

Table 3. Summary of Significant Project Elements

Element	Total Area Involved	Comment
Ditch sections involved with the Project	4.0 mi	A 4-mile portion of the Grandview Canal (aka "Middle" and "Lower" Sections, for the purposes of the current Project).
Total pipeline alignments to be installed (disturbance footprint)	3.7 mi (26.8 acres)	Pipelines would be installed directly in approximately 2.5 miles of the existing ditch prism, and approximately 1.2 miles of pipeline alignments would be installed outside the existing ditch prism. The width of the construction footprint would vary from approximately 30 to 60 feet depending on site characteristics (disturbance footprint acreage is based on the maximum disturbance footprint width of 60 feet).
Concrete structures	0.30 acre	At Project's terminal end, a hydraulic lift concrete box with the dimensions 15 feet by 20 feet by 16 feet deep would be installed. An approximately 45-foot construction buffer would be required around this structure. Concrete box structures would be installed either side of the Fruitland Mesa Road crossing. The disturbance footprint for these structures would overlap with the pipeline disturbance footprint.
Existing ditch to be abandoned & decommissioned	1.5 mi (10.9 acres)	This is the total distance of ditch/prism sections proposed for abandonment and decommissioning because of realignments. The involved acreage estimate is based on a maximum disturbance footprint width of 60 feet (although the disturbance width could be as narrow as 30 feet). Note that some of the disturbance acreage for abandoned ditch sections will overlap with the pipeline's disturbance buffer.

Element	Total Area Involved	Comment
Staging areas (6 proposed areas plus 3 previously-approved areas)	39.5 acres total	There are six dedicated staging areas proposed for the Project, totaling approximately 21.3 acres. Five staging areas are along the piped corridor, and one staging area ("LeValley Pipeyard") is about 3 miles northwest of the Project Area. Three additional, previously-approved staging areas (the Spurlin Mesa Staging Area [7.6 acres], the Center Lateral Staging Area [8.5 acres] and the Aspen Canal Staging Area [2.1 acres]) were formerly used for related projects (see Section 1.6) and would be used as needed.
Access routes	3 mi	The construction corridor would be directly accessed from county roads including Fruitland Mesa Road (Middle Section), the Crawford Airport and 3750 Road (Middle Section), and Grandview Mesa Road/East Road (Lower Section). Scenic Mesa Road and 3455 Road would be used to access the LeValley Pipeyard area. Within the construction corridor, a total of approximately 3 miles of existing private access roads would be improved if necessary (see Figure 3).

The following subsections explain the construction methods and describe other aspects (staging, schedule, post-construction activities) of the Project. For all aspects of the Project, Best Management Practices (BMPs) would minimize impacts of the Project on the human and ecological environments. BMPs and other protective measures are incorporated as part of the Project, are described and analyzed as part of the Project in CHAPTER 3 (Affected Environment & Environmental Consequences), and are summarized in CHAPTER 4 (Environmental Commitments).

2.2.1 – Pipeline Installation

Pipeline installation would first involve using trackhoes and bulldozers to grub ditch bank vegetation. Woody vegetation on the side-slopes of ditch prisms, especially in natural areas, would be left intact as much as possible. Grubbed shrubs, trees and stumps would be cut, chipped, or burned onsite or at one of the staging areas, or hauled to a local landfill.

Following grubbing, trackhoes and bulldozers would be used to reserve existing topsoil or subsurface soil, depending on the post-construction revegetation method (see Section 2.2.6) and fill the existing ditch with material from the existing ditch prism. An excavator would then trench to the appropriate depth in the prism, adjacent to the previous location of the ditch, and prepare the pipe bed. Following installation of the pipe, an excavator would backfill the pipe trench and a dozer would grade the pipe alignment to match the surrounding land contours and restore drainage patterns. Appropriately-sized culverts would be placed at drainage crossings. Alternatively, low water crossings and/or rolling dips would be installed where appropriate, instead of culverts. A one-lane dirt maintenance road or ATV trail would remain on the pipe alignment following construction.

Pipe and supplies would be transported to the construction corridor on flatbed trucks (or similar) and unloaded with front end loaders with pallet forks. A trackhoe would position the pipe in the trench, and segments of pipe would be fused or joined together in place or alongside the prepared pipe trench. The pipe would be bedded and buried with fill material from within the ditch prism or, if necessary, with bedding or fill obtained from soil piles staged at the Center Lateral Staging Area. As a last option, fill or bedding material would be obtained from a commercial sand and gravel pit. The pipeline burial depth would be below the frost line.

There is the possibility of encountering large boulders or bedrock in pipe trenches that cannot be moved with excavating equipment. In this case, conventional blasting would be used to break rock into pieces manageable with heavy equipment. Blasting would be performed by a state-permitted blasting contractor. Blasting would entail drilling a hole or holes in the (below grade) rock, placing a charge and detonator in each drill hole, and detonating the charge. The blasting activity would take place below grade entirely within the pipeline trench.

As mentioned previously, the Project would cross Fruitland Mesa Road on the east end near the start of the Project. This crossing would be trenched and open for approximately 80 feet (40 feet on either side of centerline), with concrete aprons on either end. Road surfaces that may be damaged during construction would be restored to their preexisting condition, per Delta County Road and Bridge District #3 following construction.

2.2.2 – Abandoned Ditch Segments Decommissioning

For those ditch segments that would be abandoned because of realignment paths (where the pipe alignment departs from the existing ditch prism [see Figure 3]), an excavator would be used to fill the abandoned ditch with material from the existing ditch prism, then a trackhoe would contour the filled ditch alignment to match the surrounding land, including natural drainage patterns that cross the alignment. In farmed areas, these segments would be finished with retained topsoil and revegetated using methods described in Section 2.2.6. In natural areas or unfarmed areas, the finishing method would be the sterile topsoiling and natural revegetation method, unless reseeding is requested by the landowner. Seed mixes are described in Section 2.2.6. No maintenance access road or trail would remain in these areas.

2.2.3 – Access

All access ways for construction of the Project would be on the existing ditch prisms, in the proposed new pipe corridors, on existing private roads, or directly to these areas from public roads (Figure 3). Some proposed access ways on existing private roads would require improvement (minor grading, smoothing, and widening up to 15 feet wide) in order to accommodate pipe hauling. Accessways and road crossings would be returned to the same or better condition than they were prior to construction. The access ways authorized for the Project would be clearly marked on the construction drawings.

The Applicant asserts that the existing ditch alignments involved in the Project are in statutory rights-of-way. The Applicant asserts that a statutory right-of-way "includes the right to construct, operate, clean, maintain, repair, and replace the ditch and appurtenant structures, to improve the efficiency of the ditch, including by lining or piping the ditch, and to enter onto the burdened property for such purposes." Colorado law further states that the holder of the right-of-way has access "for all reasonable and necessary purposes related to the ditch" (C.R.S. § 37-86-102 and 103). All landowners in the footprint of the Project where activities would take place outside the statutory

rights-of-way have formally agreed (or will have formally agreed prior to construction) to allow the activities of the Project to be conducted on their lands.

The anticipated average width of the construction area for the Project would be 40 feet, but could be as wide as 60 feet under certain conditions. The width of the construction footprint would depend on site conditions (slope, nearby infrastructure, nearby sensitive resources) and the ability to operate equipment safely. The authorized construction area widths would not be constrained by the existing ditch centerline, but rather would be adjustable to site conditions in order to complete the work safely and with the smallest possible disturbance footprint. Construction footprints would be limited to only those necessary to safely implement the Project. The authorized construction width would not be mechanically cleared to its maximum outer limits as a part of site preparation.

2.2.4 – Staging

Five staging areas have been identified within the pipeline corridor, along with one additional staging area ("LeValley Pipeyard") approximately 1 mile west of the Project. Staging areas in the pipeline corridor are shown on Figure 3 and the location of the LeValley Pipeyard is shown on Figure 1. In addition, another three previously approved staging areas (the Spurlin Mesa Staging Area, the Center Lateral Staging Area, and the Aspen Canal Staging Area) could be used for the Project, if needed. Staging area sizes are summarized in Table 3.

The staging areas would be used to store pipe and other Project supplies and equipment. Pipe arriving and leaving the staging areas would be transported on 50-foot flatbed trucks (or similar). Front end loaders with pallet forks would likely be used to handle pipe in the staging areas. Slash (grubbed shrubs, trees and stumps) may be processed by burning or chipping in staging areas. Any burning would be conducted in accordance with Delta County burning ordinances.

To conserve fuel and for the sake of work efficiency, working equipment would remain at active construction locations overnight, on weekends, and during times of brief work gaps due to weather conditions.

2.2.5 – Borrow Activities

The necessary pipe bedding and trench fill would be generated from within the construction footprint. To generate fill material onsite, a screening or portable crusher may be used in the construction footprint to prepare the fill material. If additional fill is required, fill would be obtained from a commercial source, or from the Center Lateral Staging Area (Figure 3), where soil piles generated from a different project are staged. Borrow material may also be used to improve or repair accessways used for the Project. Borrow material would be loaded to end-dump trucks using an excavator and hauled to the construction site via approved access ways.

2.2.6 – Weed Control & Post-Construction Revegetation

To prevent the spread of weeds during construction, all equipment and vehicles would be cleaned prior to arriving on work sites. Woody noxious weeds within the Project Area would be mechanically removed during construction preparation.

Following construction, disturbed ground would be revegetated in one of two ways: the sterile topsoiling/natural revegetation method, or the conventional method.

In the conventional revegetation method, reserved topsoil would be replaced on the prepared ground surface using a trackhoe, without back-dragging the blade (i.e., without smoothing), to create microtopography for reseeding.

In the sterile topsoiling/natural revegetation method, sub-surface soil would be reserved during pipe installation and spread on the surface following construction. Sub-surface soils do not contain a pre-existing weed seed bank, and finishing the construction site with sub-surface soils would therefore help curtail the spread of weeds following construction. Areas finished with sub-surface soils would not be reseeded since conditions for seed germination would be poor. Native plants from surrounding plant communities would naturally colonize the site over time without excessive competition from a pre-existing weed seed bank. The sterile topsoiling and natural revegetation method would be the default method of revegetation in non-farmed disturbed areas unless the underlying landowner specifically requests the conventional revegetation method.

Where conventional revegetation is required or requested, weed-free seed mixes appropriate for the surroundings would be used. For instance, where irrigated lands are revegetated, the seed mix would be a weed-free hay mix (or similar) acceptable to the landowner. Where the disturbed ground is adjacent to natural vegetation and reseeding is requested, the weed-free seed mix would include drought-tolerant and locally ubiquitous native grass such as western wheatgrass. The Project construction drawings would indicate where each revegetation method is to be used, and to specify the seed mix, where appropriate.

2.2.7 – Schedule

Construction in existing ditch alignments would occur during the irrigation off-season, to avoid interrupting irrigation activities of the shareholders. Irrigation off-season varies annually depending on weather patterns, but is typically late September or October through mid-April. Decommissioning of abandoned ditch alignments would not need to avoid irrigation season and could occur during any time of the year. Revegetation activities and weed treatments would occur during seasons when those activities have the best opportunity for success.

Construction would occur incrementally or in a sequenced fashion across the Project Area over a period of approximately two years, mostly during the irrigation off-season. When construction is underway, it would occur during daylight hours (typically 7 am to 4 pm), Monday through Saturday. Weather conditions could cause gaps in activity.

Timing restrictions would apply to certain Project activities and locations, to protect nesting migratory birds and raptors, as explained in the Wildlife Section (Section 3.2.11). The timing restrictions are specified in the Environmental Commitments of this EA (CHAPTER 4) and summarized in Table 4. Specific areas with construction timing restrictions, and the nature of those restrictions, would be prominently marked on construction drawings.

Table 4. Project Schedule Timing Restrictions Summary

Location	Activity	Timing Restriction	Reason
All Project Areas	Vegetation grubbing or clearing	Avoid April 1 - July 15	Protect migratory songbirds during their core nesting season
Buffered areas around documented raptor nests	All	Variable, between February 15 - July 31 See species-specific requirements in Section 3.2.11.	Protect nesting raptors during their core nesting season (note: location information is restricted from publicly-available maps but would be displayed on construction drawings)

2.2.8 – Habitat Replacement

In accordance with the Colorado River Basin Salinity Control Act, habitat replacement would be required to maintain riparian and wetland habitat affected as a result of the Proposed Action. This would be accomplished by using excess credits created at a habitat replacement site established for the original Grandview Canal Piping Project (Figure 1) in 2012. The habitat replacement site has been continuously maintained by GCIC with wetland enhancements, habitat plantings, and weed control. GCIC is in the process of implementing an amendment to their original habitat replacement site plan as part of ongoing maintenance and adaptive management of their habitat replacement site, and no additional work would be completed in that area under the Proposed Action.

2.2.9 – Permits & Authorizations

Agreements & Authorizations

The following interagency agreements or permits would be required prior to Project implementation:

- Memorandum of Agreement executed between Reclamation and the Colorado SHPO.
- Clean Water Act (CWA) Section 404 Regional General Permit 5 for Ditch Related Activities in the State of Colorado: 30-Day Advance of Construction Submittal Package (to include "(1) the respective agency's documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map.").

Construction Permits & Plans

The following construction permits and plans would be required prior to Project implementation:

- Stormwater Management Plan, to be submitted to Colorado Department of Public Health & Environment (CDPHE) by the construction contractor prior to construction disturbance.
- CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES), to be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).
- Certification under CDPHE Water Quality Division Construction Dewatering Discharges Permit COG070000 (if any dewatering is to take place during construction).
- Spill Response Plan, to be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies.
- Utility clearances, to be obtained by the construction contractor prior to construction activities from local utilities in the area.
- Any construction, access, or use permits which may be required by the Delta County Planning Department, County Engineering and County Road & Bridge District #3 (North Fork Area).
- If blasting is to be conducted during construction, it must be conducted by an individual with a Type I Explosives Permit from Colorado Department of Labor and Employment Division of Oil and Public Safety – Explosives Program.
- If slash burning is to be conducted, an Open Burn/Slash Pile Permit to be obtained by the construction contractor from CDPHE

Compliance with the following federal laws and Executive Orders (E.O.) are required prior to and during Project implementation (this list is not intended to be all-inclusive):

Natural Resource Protection Laws

- Clean Air Act of 1963 (42 U.S.C. § 7401)
- Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1544, 87 Stat. 884)
- Clean Water Act of 1972 as amended (33 U.S.C. 1251 et seq.)
- Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668- 668c)
- Farmland Protection Policy Act (7 U.S.C. 4201, et seq.)

Cultural Resource Laws

- National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.)
- American Indian Religious Freedom Act of 1978 (42 U.S.C. Public Law 95-341)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716)

Paleontological Resource Laws

- Paleontological Resources Preservation Act of 2009 [Section 6301-6312 of the Omnibus Land Management Act of 2009 (Public Law 111-11 123 Stat. 991-1456)]

2.3 - Lining Alternative

Under the Lining Alternative, Reclamation would authorize funding to the Applicant to install a liner in the existing open ditch alignment. The Lining Alternative was not proposed by the Applicant, but is analyzed in this EA because it meets the purpose of and need for the Salinity Control Act. The Lining Alternative would involve approximately 4 miles of open irrigation ditch (the same alignment described in Table 3 under "Ditch sections involved with the Project"). The access routes, staging areas, weed control, schedule, and permits & authorizations would be the same as or substantially similar to those described in Section 2.2.

Construction of the ditch liner would involve the following process. First, any existing riprap or sharp rocks would be removed or buried in the ditch (aka canal) bed and vegetation would be grubbed from the canal banks and either hauled to a local county landfill or mulched or burned at one of the proposed staging areas. Soft, unstable soils in the canal would be excavated and replaced with borrow material obtained onsite within the canal prism or from one of the proposed borrow areas, in order to shape the canal to design dimensions. After the canal is shaped, it would be compacted using vibratory plates mounted to excavators, to specifications verified by a geotechnical engineer. The next step is to place the synthetic liner system on the prepared grade. The first layer would consist of a non-woven geotextile that is intended to protect the impermeable layer (a polyvinyl chloride [PVC] membrane) from damage from any remaining sticks or sharp rocks in the subgrade. The PVC membrane (30 mil) would be placed on top of the non-woven geotextile and seams between PVC panels heat-fused together. A final layer of non-woven geotextile would be placed on the PVC membrane in order to provide a bonding surface for shotcrete. A minimum of 3 inches of fiber-reinforced shotcrete would then be sprayed on top of the liner. After the shotcrete has been applied, the synthetic liner system would be horizontally anchored into the canal banks a minimum of 2 feet, and the edges of the liner fabric buried. Equipment required for the canal lining would include the following: a trackhoe or excavator with buckets, conventional loaders, a skid steer loader, a tamper, a grader, an end dump, haul trucks to transport bedding fill material, a concrete truck, and a pneumatic concrete pump for placing shotcrete. Due to the distance and travel time from local concrete sources, it is likely that the shotcrete would be mixed at one of the proposed staging areas rather than hauled in commercially. On-site shotcrete mixing would be accomplished using a portable batch plant, or a mobile mixer truck. Up to approximately 600 truckloads of shotcrete would be required over the course of the Project. Water for mixing the shotcrete would be obtained locally from an irrigation well (or similar) by agreement with a local landowner and hauled in a water truck to the mixing location. Sand and cement required for shotcrete mixing would be purchased by the Applicant, hauled to the mixing location by a commercial provider, and stockpiled and/or siloed in a staging area. The portable batch plant or mobile mixer truck would require diesel fuel, which would be stored in bulk in on of the proposed staging areas (with appropriate spill containment). Fuel would be hauled and transferred to bulk storage by a licensed commercial provider. Post-construction cleanup would include smoothing of the access road alongside the canal, smoothing access roads as necessary, trash pickup, and weed control. Shareholder turnout structures would be replaced. The new turnouts would consist of precast concrete structures with control gates and punch-plate screens. A PVC pipe would carry water through the lined canal wall through a flow-measuring device that would discharge to the existing water delivery infrastructure at each turnout.

CHAPTER 3 – AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

3.1 – Introduction

This chapter discusses resources that may be affected by the two Action Alternatives and the No Action Alternative. For each resource, the affected area and/or interests are identified, existing conditions described, and impacts are disclosed under the No Action, Project (Piping Alternative, the Preferred Alternative), and Lining Alternative. This section concludes with a summary of impacts.

3.2 – Affected Environment & Environmental Consequences

3.2.1 – Water Rights & Use

The geographic scope of the analysis is the Project Area shown on Figure 1, which covers the area of potential effect for this resource by construction of the Project.

The Applicant is a privately owned, non-profit, mutually-funded irrigation company incorporated and operating in Delta County since 1922, with several absolute decreed water rights totaling 38.835 cubic feet per second (cfs), most of which were appropriated between in the late 1800s. The total average rate of annual diversions of irrigation water through Grandview Canal (aka Grandview Ditch) including direct diversion from the Smith Fork River and water called from Crawford Reservoir) is approximately 14,211 acre-feet. The irrigation season is approximately 183 days long, and approximately 4,480 acres of hay crops and pasture on Grandview and Scenic mesas are irrigated with the system. The Grandview Canal originates at a head gate on the Smith Fork River at a location just southeast of the Town of Crawford, and provides users with irrigation water and winter stock water across Grandview Mesa. Late season water called from Crawford Reservoir is also delivered in Grandview Canal. A portion of the irrigation water carried by the Grandview Canal is lost during conveyance in the open, earthen canal due to evaporation and seepage, resulting in less than the full amount of decreed water being delivered to the shareholders. Irrigation is primarily accomplished by sprinkler methods, and to a lesser extent with flood irrigation from ditch laterals and gated pipe. The system also carries winter stock water (5.2 cfs on average) during the non-irrigation season for an annual average of 182 days; however, delivery of this water is only possible during times when the water is not frozen.

There are other privately-owned adjudicated irrigation water rights that are diverted from streams in the general Project Area or that possess delivery infrastructure in the Project Area. The local area distribution of water is overseen by a Colorado Division of Water Resources Water Commissioner, an official who enforces the priority system of water rights and water laws of the State of Colorado.

No Action Alternative: The No Action Alternative would have no effect on water rights and uses within the Project Area. The water delivery system would continue to function as it has in the past.

Project (Piping Alternative): Under the Piping Alternative, the Applicant would have the ability to better manage irrigation water with efficiencies gained from eliminating seepage by improving the system. The new turnout structures include adequate controls and measuring devices which would further improve water management in the system. By eliminating ditch seepage and evaporative loss from the open ditches, the Project would result in more water (i.e. the saved seepage/evaporation water) delivered per share to irrigated crops—in other words, the full decreed amount of water would be delivered. While not currently planned, the availability of pressurized water to the shareholders would also enable future installation of high-efficiency on-farm sprinklers.

Winter stock water delivery to shareholders would be temporarily affected by the Project. Winter stock water would be provided to affected shareholders (west of 3750 Road along the Lower Section) during the Project construction using water from the Crawford Clipper Ditch system and by agreement with the Crawford Clipper Ditch Company. Alternative arrangements for winter stock water are common due to the inability of the ditch system to deliver the stock water when temperatures are low enough that the stock water freezes in the open ditch. Due to the availability of temporary alternative stock water arrangements, the Project's effects on winter stock water would not rise to the level of significant.

Irrigation water rights owned by others in the Project Area would not be impacted by the Project. The Project has been designed such that it would not physically interfere with the diversion, delivery, or use of water rights owned by other entities.

There would be no significant adverse impacts to water rights and use as a result of the Project, because the Project would produce water delivery efficiencies beneficial to the Applicant's shareholders.

Lining Alternative. The impacts to water rights from the Lining Alternative would not differ from the Piping Alternative, as described above, with the following exceptions: Unlike the Piping Alternative, the Lining Alternative would not eliminate evaporative loss from the ditch system, therefore this alternative would produce less delivery efficiency than the Piping Alternative. Unlike the Piping Alternative, winter stock water would not be available to shareholders during freezing temperatures following implementation of the Lining Alternative.

There would be no significant adverse impacts to water rights and use from implementing the Lining Alternative, because the Lining Alternative would produce irrigation water delivery efficiencies beneficial to the Applicant's shareholders, and winter stock water delivery would remain unchanged from pre-construction conditions.

3.2.2 – Water Quality

The geographic scope of the analysis for water quality is the lower Gunnison River and the greater Colorado River Basin, because irrigation practices in the region and in the Project Area are contributing to elevated downstream salinity levels and create an adverse effect on the water quality of the Gunnison River and in the greater Colorado River Basin. In addition, selenium occurs in the region's soils in soluble forms such as selenate, which leaches into waterways by runoff and irrigation practices, and is toxic to living organisms when present beyond trace amounts. There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds, resulting in improved water quality at a basinwide scale (see Section 1.4). There are also ongoing regional efforts

to reduce selenium loading in the lower Gunnison and Colorado river basins (SMPW 2011, Reclamation 2020a).

In 2021, the U.S. Army Corps of Engineers (Corps) issued Regional General Permit 5 (RGP-5) for Ditch Related Activities in the State of Colorado. RGP-5 "authorizes discharges into ditches that have minimal individual or cumulative adverse effects on the aquatic environment," and covers construction, realignment, and relocation of existing ditches and conversion of such ditches into pipes or lined conveyances.

No Action Alternative: Under the No Action Alternative, the estimated 4,421 tons of salt annually, described above in Section 1.4.1 (Reclamation 2020a), contributed to the Colorado River Basin from the ditch laterals involved with the Project would continue. Current selenium loading levels would continue.

Project (Piping Alternative): In the long term, the Project would eliminate seepage from the involved ditch sections, reducing salt loading to the Colorado River Basin at an estimated rate of 4,421 tons per year, as described above in Section 1.4.1 (Reclamation 2020a). The Project would reduce selenium loading into the Gunnison River basin, although the amount of selenium loading reduction that would result from the Project has not been quantified. Improved water quality would benefit downstream aquatic species by reducing salt and selenium loading in the Gunnison River, an important Colorado River Basin tributary. Maintenance or improvement of water quality in the Gunnison River is of high importance to users and to wildlife. The beneficial effects of improved water quality resulting from the Project would contribute to the regional efforts underway to reduce salinity and selenium in the lower Gunnison and Colorado River watersheds.

The Project would affect waters under the jurisdiction of Clean Water Act (CWA) Section 404 (the ditches themselves) and disturb irrigation-induced wetland and riparian vegetation associated with the ditches. As a "ditch related activity in the State of Colorado" that is "conducted under a binding agreement with the USBR" (Reclamation), the Project would be authorized under RGP-5, by submitting documentation required by RGP-5 to the Army Corps at least 30 days in advance of construction. The required documentation for the Project, as a salinity control project per a binding agreement with Reclamation, is as follows: "(1) the respective agency's documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map." RGP 5 includes terms and conditions with which project proponents must comply to ensure their proposed projects will have minimal direct or indirect adverse effects on the aquatic environment. The USACE has the authority to determine if an activity complies with the terms and conditions of an RGP. By authorizing use of RGP 5 for the proposed action, the USACE has determined that the Project has minimal direct or indirect adverse effects on the aquatic environment. Therefore, there would be no significant impact to waters under the jurisdiction of CWA Section 404.

BMPs would be implemented during construction to minimize short-term erosion and further protect water quality. Project construction would take place in the ditch prism when water is not present. Pipeline crossings of any drainages would be conducted in accordance with CDPHE's Water Quality Control Division Dewatering General Permit to protect water quality in streams. The construction contractor would be required to operate under a Stormwater Management Plan, a

Stormwater Discharge Permit, a Spill Response Plan, and a Dewatering Permit (when dewatering is conducted) (see Section 2.2.9 and CHAPTER 4).

There would be no significant adverse impacts to water quality as a result of the Project, because required permits and construction BMPs would be implemented, and because the overall result of the Project would be to improve water quality (reduce salinity) in the Colorado River Basin.

Lining Alternative. The impacts to water quality from the Lining Alternative would not differ from the Piping Alternative, as described above.

There would be no significant short- or long-term adverse impacts to water quality from the Lining Alternative, because required permits and construction BMPs would be implemented, and because the overall result would be to improve water quality (reduce salinity) in the Colorado River Basin.

3.2.3 – Hydrology

Hydrologic resources in the Project Area include surface water and groundwater. The geographic scope of the analysis for surface water is the area of affected environment and general geographic vicinity of connected surface waters related to the ditch segments associated with the Project. These include Grandview Mesa and a part of the lower Smith Fork drainage extending from the initiation point of the Project to a point approximately 2 miles downstream where the existing Grandview Canal contours out of the Smith Fork drainage, and is a total of 5,202 acres. The geographic scope of the analysis for groundwater are the two USGS hydrologic units that intersect the Project Area, where U.S. Geological Survey (USGS) data are available for estimating groundwater recharge.

Surface waters in the geographic analysis area consist of natural waterbodies (streams and natural wetlands) and constructed waterbodies (such as irrigation ditches, reservoirs, stockwater ponds, and anthropogenically-induced wetlands). The geographic analysis area has approximately 33.9 acres of open surface water, consisting of at least 20.3 acres of natural streams and irrigation ditches and 13.6 acres of reservoirs and stockwater ponds (Reclamation 2025a). The ditch sections involved with the Project contribute approximately 3.4 acres of seasonal open water surface area, representing approximately 10 percent of the open water surface area of the geographic analysis area.

According to the National Wetland Inventory, about 287 acres of areas with wetland or riparian hydrology are associated with open surface waters in the geographic area of analysis (Reclamation 2025a). Wetland or riparian hydrology is present where soils are inundated with surface water for a significant part of the growing season, such that riparian and wetland plant communities are supported (see Section 3.2.9). The ditch segments involved with the Project contribute about 1.7 acres of wetland and/or riparian hydrology (ERO 2023), or about 0.6 percent of the total area of wetland and/or riparian hydrology in the geographic analysis area.

There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds, resulting in an ongoing area-wide conversion of areas with artificially-induced riparian and wetland hydrology to uplands. Consistent with the Colorado River Basin Salinity Control Act, habitat replacement projects compensate for the loss of riparian and wetland hydrology values.

Groundwater recharge or deep percolation is the hydrologic process in which surface water infiltrates downward through an unsaturated zone into a subsurface water table or aquifer. Rates of recharge vary regionally, and depend on several major factors, including precipitation (available

water), soil and geologic characteristics (substrate permeability), and evapotranspiration of water by plants (which reduces water available for deep percolation). While the USGS has conducted studies on salinity loading in the upper Colorado River basin (see Section 1.4.1), comprehensive studies to determine the characteristics of groundwater and groundwater movement have not been conducted in the Project Area. However, USGS has developed a raster dataset to estimate average annual natural groundwater recharge in the conterminous United States (USGS 2003). The dataset was created by multiplying a grid of base-flow index (BFI) values by a grid of mean annual runoff values. BFI is a measure of the proportion of river runoff that derives from stored sources; the more permeable the rock, superficial deposits and soils in a catchment, the higher the baseflow and the more sustained the river's flow during periods of dry weather. Thus, the BFI is an effective means of indexing catchment geology (UKCEH 2023). Annual runoff is that part of precipitation which appears as a flow of water in surface streams. When considered together, the BFI and annual runoff data that the USGS receives is sufficient for the USGS to produce a dataset containing a reasonable estimate of natural groundwater recharge.

The Project Area falls within the boundaries of two HUC-12 sub-watersheds (HUCs 140200021206/Lower Smith Fork-Gunnison and 140200040508/Alum Gulch-North Fork Gunnison). These two sub-watersheds contain a total of 66.422 acres, and constitute the geographic scope of this analysis, as they are the sub-watersheds with the potential to be impacted by the Project. Watersheds are delineated by the USGS using a nationwide system based on surface hydrologic features. This system divides the country into 21 regions (2-digit), 222 subregions (4-digit), 370 basins (6-digit), 2,270 subbasins (8-digit), ~20,000 watersheds (10-digit), and ~100,000 sub-watersheds (12-digit), or hydrologic units. A hierarchical hydrologic unit code (HUC) consisting of 2 additional digits for each level in the hydrologic unit system is used to identify any hydrologic area. Each hydrologic unit is assigned a 2-digit to 12-digit number that uniquely identifies each of the six levels of classification within six two-digit fields. HUC-12 is the most granular level of sub-watershed classified in the Project Area. The USGS estimates the average annual groundwater recharge rate in the two HUC sub-watersheds in the Project Area to be 110.4 mm/year (USGS 2003).

There is one domestic well (permitted by the State of Colorado to draw on natural sources of groundwater) within 500 feet of the involved ditch sections (Reclamation 2025a), and several other wells in the general areas of Grandview Mesa, the lower Smith Fork drainage, and nearby Crawford Mesa. Irrigation water which has seeped from the canal prism is not a natural source of groundwater. Pursuant to Colorado Revised Statute (C.R.S.) § 37-86-103, "…a ditch right-of-way includes the right to construct, operate, clean, maintain, repair, and replace the ditch and appurtenant structures, to improve the efficiency of the ditch, including by lining or piping the ditch…".

No Action Alternative: Under the No Action Alternative, nothing would occur which would alter the surface hydrology of Grandview Mesa and the affected segment of the lower Smith Fork drainage. Nothing would occur which would alter the BFI or annual runoff of the HUC sub-watershed areas, so there would be no change in the estimated groundwater recharge in the area. Nothing would occur which would affect natural groundwater or domestic well permits. Because the surface hydrology and the estimated amount of groundwater recharge into the two HUC sub-watershed areas would not change, and because there would be no change to the natural groundwater in the Project Area, there would be no significant impacts to surface water, groundwater recharge, or domestic well permits associated with the No Action Alternative.

Project (Piping Alternative): Approximately 10 percent of the existing surface water in the area of geographic analysis (Grandview Mesa and a segment of the lower Smith Fork drainage) would be piped, reducing evaporative loss of this water during transport. Once the water is distributed on the ground surface for irrigation, some of the water would evaporate, some of the water would be taken up by crops, and some water would enter the soil.

The water that currently flows in the ditch sections involved with the Project creates wetland and riparian hydrologic conditions that support a narrow fringe of wetland and riparian vegetation comprising about 0.6 percent of such areas in the geographic analysis area. Piping these ditches would change the surface hydrology along the fringes of these ditches from wetland and riparian hydrology to upland (dry) conditions, or irrigated conditions, depending on the location. As stipulated by the Salinity Control Act, habitat replacement (Sections 2.2.9 and 3.2.9) must occur for the Project. An existing habitat replacement site developed by GVIC for a previous project generated excess habitat credits above that which was required to replace habitat lost with the previous GIVC project. These excess habitat credits would be used to offset habitat losses associated with the current Project; therefore, there would be no net loss of fish and wildlife values (in this case, riparian and wetland vegetation, and by association, riparian and wetland hydrology) due to implementation of the Project. The timeline for which the habitat replacement project would be required to be maintained would restart with the current Project to ensure that habitat is replaced for the life of the current Project (50 years).

Because there would be no net loss of riparian and wetland hydrology values associated with implementation of the Project, the effects of the loss of riparian/wetland hydrology adjacent to the ditches involved with the Project would be insignificant. The Piping Alternative would contribute to the larger-scale loss of artificially sustained areas of riparian and wetland hydrology collectively resulting from piping projects around the region. Consistent with the Colorado River Basin Salinity Control Act, habitat replacement projects compensate for the loss of riparian and wetland habitat hydrology values.

There would be no change in the inputs utilized by USGS to estimate average annual groundwater recharge (BFI values or mean annual runoff values) as a result of the Project. The same water which currently precipitates into the two HUC-12 sub-watershed areas would continue to precipitate within the area after Project implementation. The portion of the seepage which currently enters the groundwater through the canal prism would be redistributed within the general Project Area. While the specific area where the canal leakage would seep into the groundwater would be redistributed, it would be redistributed within the irrigated acres related to the canals associated with the Project, and therefore it would remain in the general Project Area within the two HUC-12 sub-watershed area. The redistribution would not alter the BFI or annual runoff of the area, so there would be no change in the estimated groundwater recharge in the area.

Ditch companies have the right to improve the efficiency of their ditches pursuant to C.R.S. § 37-86-103. Consequently, domestic water well owners cannot rely on canal seepage water to recharge domestic water wells. The Project would not alter natural sources of groundwater. Therefore, there would be no significant adverse effect on domestic well permits, which authorize wells to draw on natural sources of groundwater.

Because the estimated amount of groundwater recharge into the two HUC-12 sub-watershed area would not change, there would be no significant impact to groundwater recharge as a result of the

Project. Because the wetland and riparian surface hydrology related to the piping component of the Project would be conserved at the existing habitat replacement site, there would be no significant impact to surface hydrology as a result of the Project. Because the Project would not alter natural sources of groundwater, there would be no significant adverse effect on domestic well permits near the Project Area. *Lining Alternative.* The impacts to hydrology from the Lining Alternative would not differ from the Piping Alternative, as described above, with the following exception: Under the Lining Alternative, the same area of surface water that would be piped under the Piping Alternative would instead remain open water. Following construction, evaporative loss from the open water of the lined ditches would continue at the pre-construction rate, and because of the lining, the contribution to groundwater recharge would be similar to that of the Piping Alternative.

Because the estimated amount of groundwater recharge into the two HUC-12 sub-watershed areas would not change, there would be no significant impact to groundwater recharge as a result of the Lining Alternative. Because the wetland and riparian surface hydrology related to ditch lining would be maintained at the existing habitat replacement site, there would be no significant impact to surface hydrology from the Lining Alternative. Because the Lining Alternative would not alter natural sources of groundwater, there would be no significant adverse effect on domestic well permits near the Project Area.

3.2.4 – Air Quality

The geographic area of analysis is the airshed of the spatial extents of the Project Area (Figure 1), where people and the environment could potentially be affected by pollution emitted during construction activities. The Clean Air Act regulates emissions of air pollutants from stationary and mobile sources of pollution, and enforcement is at the state level under the Code of Colorado Regulations (CCR) at 5 CCR 1001-5. If the levels of a pollutant in an area are higher than National Ambient Air Quality Standards (NAAQS), the airshed is designated as a "nonattainment area." Areas that meet the NAAQS for criteria pollutants are designated as "attainment areas." The level of analysis for NAAQS airsheds in Colorado is by county. Delta County is in attainment for all criteria (monitored) pollutants (EPA 2025). Impacts to air quality occur from a variety of stationary and mobile pollution sources throughout Delta County. Minor impacts to air quality from routine maintenance of the ditch system involved with the Project include dust and exhaust from occasional travel in light vehicles along the Project corridor, and occasional ditch cleaning and maintenance activities involving heavy equipment and occasional ditch burning. Together, these impacts have not historically risen to the level of non-attainment in the county.

No Action Alternative: There would be no effect on air quality in the Project Area from the No Action Alternative. The ditches would continue to operate in their current condition and dust, smoke, and exhaust would occasionally be generated by vehicles and equipment conducting routine maintenance and operation.

Project (Piping Alternative): Exhaust and dust from construction activities would have a minor, short-term effect on the air quality in the immediate Project Area. There would be no impact to air quality from blasting, because blasting would be conducted inside the pipeline trench and below grade. There would be no long-term significant impacts to air quality from the Project, as air quality would return to its baseline level and Delta County would remain in attainment for all criteria pollutants. BMPs would be implemented to further minimize dust in the Project Area. Following construction, impacts to air quality from routine maintenance and operation activities along the pipeline corridor

would be insignificant, as they would be similar or less in magnitude to those currently occurring for the existing ditch.

There would be no significant adverse impacts to air quality as a result of the Project, because construction activities are short-term and localized, the contractors completing the work would be required to follow State of Colorado air quality regulations established to protect the airshed from significant impacts (5 CCR 1001-5), and Delta County would remain in attainment for all criteria air pollutants.

Lining Alternative. The impacts to air quality from the Lining Alternative would not differ from the Piping Alternative, as described above.

There would be no significant adverse impacts to air quality as a result of the Lining Alternative, because construction activities are short-term and localized, and Delta County would remain in attainment for all criteria air pollutants.

3.2.5 –Access, Transportation, & Safety

The Project Area (Figure 1) is the geographical scope of the access, transportation, and safety analysis, where construction has the potential to affect this resource. The Applicant asserts that it currently operates the ditch within statutory rights-of-way in the Project Area to which it claims to be entitled under Colorado law, which authorizes a right-of-way that "includes the right to construct, operate, clean, maintain, repair, and replace the ditch and appurtenant structures, to improve the efficiency of the ditch, including by lining or piping the ditch, and to enter onto the burdened property for such purposes." Colorado law further states that the holder of the right-of-way has access "for all reasonable and necessary purposes related to the ditch" (C.R.S. § 37-86-102 and 103).

Private and public roads generally provide access and mobility for residents traveling in and out of the Project Area. The main public transportation routes that intersect the Project are Fruitland Mesa Road and 3750 Road. Other roads that would be used to reach the Project Area include Grandview Mesa Road, Stearman Lane, Indian Head Lane, French Field Way, Krai Lane, and Cattle Drive. The previously analyzed staging areas are accessed from Spurlin Mesa Road, a BLM route that already serves as a regular Crawford Clipper Ditch Company operating and maintenance route, and Highway 92. Highway 92 is the main regional route between the towns of Crawford and Hotchkiss and receives moderate to heavy traffic depending on time of day and time of year.

Various overhead or buried utilities are present near some elements of the Project. Various overhead or buried utilities are present near some Project Areas. The utility entities include the Crawford Mesa Water Association (domestic water), Delta Montrose Electric Association (electricity and fiber optic internet), TDS Telecom, and Black Hills Energy (natural gas).

Safety risks are associated with sources of open, moving water. The Project Area is served by the Delta County Sheriff, the Delta County Ambulance District, and the Delta County Fire Protection District 5.

No Action Alternative: There would be no effect to public safety, transportation, or public access from the No Action Alternative. The ditches would continue to operate in their current condition and the baseline status of access, public safety, transportation routes, and utilities in the vicinity would remain unchanged.

Project (Piping Alternative): All construction activities related to the Project would take place entirely in the approved and Project ROWs. The disturbance footprint would not exceed 60 feet wide, but is expected to average approximately 40 feet wide. In all cases, effort would be taken to create the smallest disturbance footprint, including a footprint that remains inside the historical area of disturbance if possible, that allows for safe completion of the planned work. However, for safety purposes and to achieve engineering requirements in the easement, the Applicant may, in accordance with C.R.S. §37-86-103, "enter onto the burdened property for such purposes, with access to the ditch and ditch banks, as the exigencies then existing may require, for all reasonable and necessary purposes related to the ditch." No work would occur beyond the right-of-way provided by statute.

There would be no need for construction of new access roads outside of the construction areas. There are no known bridges with weight restrictions that would be used by construction vehicles. Some short-term disruption of traffic at the involved public roads is expected to occur when equipment and materials are hauled into the Project location, and when pipe crossings are constructed across public roads. Appropriate traffic signage would be used to notify drivers of active construction ingress/egress. The construction contractor and/or the Applicant would coordinate with the county and sheriff department if traffic or access would be delayed or substantially re-routed. Due to the temporary nature of the traffic disruptions and the traffic management provided by coordination with the county and sheriff department, the impacts on traffic would not rise to the level of significant.

All utilities would be located and marked and, if necessary, relocated or raised, prior to any construction activities in the Project Area. If relocation or raising of utilities is necessary during construction, a brief interruption of utility services would occur. Due to the temporary nature of the interruptions, the impacts on utilities would not rise to the level of significant.

Under the Proposed Action, the safety risks associated with open, moving water associated with the ditch would no longer occur within the Project Area. The Delta County Sheriff, Delta County Ambulance District, and the Delta Fire Protection District 5 would continue to cover the Project Area for emergency response, and would not be hindered in their response. Any required construction, access, or use permits would be obtained from the Delta County Planning Department, County Engineering and County Road & Bridge District #3.

Active construction areas would be adequately marked and barricaded to prevent public access. If blasting is necessary during construction, it would be conducted by a blasting contractor under a permit from the Colorado Department of Labor and Employment Division of Oil and Public Safety – Explosives Program. Blasting would be in accordance with State regulations, localized and below-grade, and any potential impacts would not reach beyond the immediate construction area. Potential impacts would not reach beyond the immediate construction area because in accordance with State permit requirements, each blast must be designed and the charge size calculated to ensure that the energy from the blast is directed into breaking up the intended material, rather than being dissipated outward. Trenches left open overnight would be limited to the extent practicable. In the case that a trench is left open overnight, it would be covered to adequately prevent entrapment of people, livestock, or wildlife. Therefore, there would be no significant effect on public safety.

No significant impacts to access, transportation, and public safety would occur as a result of the Project, because traffic and access disruptions would be short-term and coordinated with authorities, and public safety measures would be implemented in construction areas.

Lining Alternative. The impacts to access, transportation, and safety from the Lining Alternative would not differ from the Piping Alternative, as described above, with the following exception: under the Lining Alternative, the safety risks associated with sources of open, moving water would remain in the Project Area.

No significant impacts to access, transportation, and public safety would occur as a result of the Project, because traffic and access disruptions would be short-term and coordinated with authorities, public safety measures would be implemented in construction areas, and safety risks associated with open water would remain unchanged from pre-construction conditions.

3.2.6 – Property Values

Property values in the Project Area are assessed periodically by the Delta County Assessor for the purposes of calculating property taxes. Assessments involve property inspections and interviews, consideration of market value when a property sells, and consideration of residential and agricultural improvements (location, size, age, construction, and quality), with the goal of systematically ensuring fair and equitable property valuations. Irrigated agricultural land typically has a higher assessed value and market value per acre than non-irrigated agricultural land in the same economic area. The value of the property may shift positively or negatively due to the personal preferences of potential buyers. For example, some people may feel the networks of irrigation ditches in the region that support scattered mature cottonwood trees contribute positively to property values because the trees provide aesthetic interest and cooling shade to the landscape, while others may feel open ditches can be a liability and the presence of modern irrigation infrastructure which aids in an increased ability to deliver agricultural water shares contributes positively to property values.

No Action Alternative: There would be no property value effects from the No Action Alternative. The ditch would continue to operate as an open, unlined ditch in its current condition. The baseline status of scattered cottonwoods along the ditch would remain the same, and be subject to potential ditch maintenance activities in the future.

Project (Piping Alternative): The Project would result in the loss of certain large cottonwood trees in the construction corridor and the removal of a seasonal flowing open water source on some properties in the Project Area. Changes to subjective aesthetic interest (Section 3.2.8) and cooling shade from cottonwoods (Section 3.2.15) would occur. According to the County Assessor, no statement or complaint has been received from a landowner, property buyer, or property seller, that a piped ditch had detracted from the value of a property in the North Fork valley (George 2023). The County Assessor noted that in certain cases, an open ditch could be considered a liability by a buyer, and in other cases, an aesthetic amenity (George 2023). In general, in this agricultural area of Delta County, it is not open ditches that add value to real estate, but rather the irrigation water itself and its application to farmlands (George 2023). The application of water to farmlands can produce profitable crops for landowners, while at the same time providing green open space in the area that contributes to the scenic pastoral views enjoyed by the residents around the area.

From the County Assessor's perspective, while the market value of a property may shift positively or negatively due to the personal preferences of potential buyers, the value of a property would not change as a result of piping the ditches (George 2023).

No significant impacts to property values would occur as a result of the Project, because piping the ditch would not affect the factors that are considered during the County Assessor's valuation process.

Lining Alternative. The impacts to property values from the Lining Alternative would not differ from the Piping Alternative, as described above.

No significant impacts to property values would occur as a result of the Lining Alternative, because lining the ditch would not affect the factors that are considered during the County Assessor's valuation process.

3.2.7 - Noise

The geographic scope of analysis for noise is the Project Area (Figure 1), where people and wildlife could potentially be affected by Project construction noise. A moderate baseline level of noise occurs in the Project Area, associated with farming and ranching activities, regular traffic on public roads, county and state highway maintenance activities, and the Applicant's operation and routine maintenance of the ditch system. Operation and maintenance involve the use of light-duty trucks, all-terrain vehicles and, occasionally, heavy equipment. Farming and ranching activities involving the use of farming equipment, light vehicles, all-terrain vehicles, and occasionally heavy equipment are ongoing in the immediate area and surroundings of the Project.

No Action Alternative: There would be no effect from the No Action Alternative, because there would be no construction noise related to ditch piping or ditch lining in the Project Area. Noise related to ditch operation and maintenance activities would continue as it has in the past.

Project (Piping Alternative): Project construction activities would generate a temporary source of noise audible to residents near the piping component of the Project. Sources of noise would include heavy equipment moving earth or crushing rock, trucks hauling pipe and other materials, and heavy equipment grubbing vegetation. As explained in Section 2.2.1, blasting may also be required to help prepare the pipe trench if bedrock is encountered. Blasting would occur inside the trench and below grade. The noise associated with such blasting would resemble a muffled "pop" from a firearm. These disturbances would occur during daylight hours (typically 7 am to 4 pm), Monday through Saturday, on a sequenced basis along the ditch section involved with the Project.

No significant impacts to noise would occur as a result of the Project, because noise associated with construction of the Project would be short-term and would not raise the noise level of the area above the moderate noise baseline; therefore, the short-term increase in noise would not be significant.

Lining Alternative. The impacts to noise from the Lining Alternative would not differ from the Piping Alternative, as described above.

No significant impacts to noise would occur as a result of the Lining Alternative, because noise associated with construction would be short-term and would not raise the noise level of the area

above the moderate noise baseline; therefore, the short-term increase in noise would not be significant.

3.2.8 – Visual Resources

The geographic scope of analysis is the south part of Crawford Mesa, the south part of Grandview Mesa, and part of the Smith Fork canyon. These areas encompass the general area where the Project is located, and the local viewshed of residents around the Project Area. These areas possess pastoral beauty, with a pleasing array of colors and textures across the relatively open landscape—a mosaic of irrigated agricultural fields, rural residential areas, natural shrublands, woodlands, and rocky slopes, scattered cottonwoods around residences and other developed areas, and natural wooded riparian corridors—against a backdrop of near and distant foothills and mountains. The ditch sections that traverse the area are linear features, often bermed and with an attendant access road and soil spoil piles remaining alongside or on the bermed area (ditch prism). The ditch sections support bands of shrub willows and occasional mature cottonwood trees which are visible on the relatively open and gently-rolling landscape or canyon-side landscape.

A baseline level of visual disturbance occurs in the Project Area, associated with local ranching and farming, local construction projects, and the Applicant's operation and routine maintenance of the ditch system. These activities can involve vehicles, machinery, earth moving, field and ditch burning, and can generate dust and smoke.

No Action Alternative: There would be no visual impacts from the No Action Alternative. The baseline level of visual disturbance in the Project Area associated with residential and farmstead developments, local ranching and farming activities, local construction projects, and the Applicant's operation and routine maintenance of the ditch sections would continue.

Project (Piping Alternative): Temporary impacts related to visual disturbance during and after construction would result from the Project. Machinery would be operating on the open landscape and highly visible from public roads in certain locations on a spatially incremental basis mostly during winter months during construction, and would be utilized sporadically for future maintenance of the pipeline. Following construction in the pipeline and abandoned ditch reaches, the disturbance footprint would be a linear area of bare ground, similar in appearance to its current condition. Within a few growing seasons, revegetation would help the disturbed ground blend with the surroundings. This impact would not rise to the level of significant.

While an estimated 0.52 acre of scattered cottonwoods would be in the construction footprint (ERO 2023), the overall long-term level of change to the visual characteristics of the landscape in and around the Project Area following construction would be minor. The scenic views around the Project Area of the mosaic of irrigated agricultural fields, rural residential areas, natural shrublands and badlands, scattered cottonwoods around residences and other developed areas, and natural wooded riparian corridors—against a backdrop of near and distant foothills and mountains, although slightly different following the Project, would remain intact overall.

No significant impacts to visual resources would occur as a result of the Project, because construction impacts would be temporary and the visual characteristics of the landscape in and around the Project Area during and following construction would be minor and not out of character with the surrounding landforms or with the rural and the open agricultural character of the vicinity.

Lining Alternative. The impacts to visual resources from the Lining Alternative would not differ from the Piping Alternative, as described above, with the following exception: the visual scar left by the Lining Alternative would include the shotcrete-lined ditch sections rather than the bare and eventually revegetated ground that would result from the Piping Alternative.

No significant impacts to visual resources would occur from implementation of the Lining Alternative, because construction impacts would be temporary and the visual characteristics of the landscape in and around the Project Area during and following construction would be minor and not out of character with the surrounding landforms or with the rural and the open agricultural character of the vicinity.

3.2.9 – Vegetation

The geographic scope of analysis for vegetation is an approximately 5,202-acre area encompassing the general Grandview Mesa area (approximately 4,942 acres) and a portion of the lower Smith Fork drainage (approximately 260 acres). The geographic scope of analysis for vegetation is the context within which physical disturbance or changes to vegetation would take place because of Project construction. Reclamation performed a spatial analysis in GIS (Reclamation 2025a), using publicly-available landcover and irrigated land datasets, to estimate that the geographic area of analysis are a mix of farmlands (approximately 3,315 acres of irrigated hayfields and grass pastures), developed farmstead areas and roads (a total of about 64 acres), natural uplands (about 1,536 acres in mixed saltbush (*Atriplex* spp.), sagebrush (*Artemisia* spp.), or pinyon (*Pinus edulis*)-juniper (*Juniperus osteosperma*) woodlands), and riparian and wetland areas (approximately 287 acres).

The maximum construction footprint of the Project Area contains approximately 15 acres of farmlands and 30 acres of uplands (Reclamation 2025a), as well as approximately 1.7 acres of ditch-bank wetlands and riparian areas (ERO 2023). The ditch banks in the construction footprint support intermittent narrow corridors of irrigation-induced riparian and wetland vegetation, including stands of coyote willow (*Salix exigua*), sedges (*Carex* and *Eliocharis* spp.), and rushes (*Juncus* spp.), occasional cottonwoods, and scattered non-native trees including Russian olive (*Elaeagnus angustifolia*) and salt cedar (*Tamarix* sp.) (ERO 2023). Within this area, cottonwood trees contribute an estimated 0.52 acre of riparian vegetation cover along the ditch sections involved with the Project (ERO 2023). The proposed staging and borrow areas for the Project are on a total of 39.5 acres (Table 3) of farmed or previously disturbed ground with upland vegetation.

Vegetation along the ditch sections involved with the Project is disturbed by routine maintenance, which includes periodic mechanical clearing with heavy equipment and occasional burning or application of herbicides.

There is a regional effort to reduce salinity in the lower Gunnison and Colorado River watersheds, resulting in an ongoing area-wide conversion of artificially-created riparian and wetland habitat to uplands. Consistent with the Colorado River Basin Salinity Control Act, habitat replacement projects compensate for the loss of riparian and wetland habitat values.

No Action Alternative: There would be no effect on existing vegetation from the No Action Alternative. The Applicant would continue to occasionally manage vegetation along the ditch, which includes periodic mechanical clearing with heavy equipment, burning, or application of herbicides.

Project (Piping Alternative): The construction of the Project would directly disturb a maximum footprint of approximately 37.7 acres—including approximately 30 acres of upland vegetation (Reclamation 2025a), about 15 acres of farmland (Reclamation 2025a), and approximately 1.7 acres of ditch bank wetland and riparian vegetation (ERO 2023). The impact would be evident in the Project Area as a linear disturbance absent of vegetation for a period of one growing season in irrigated agricultural areas to several years in natural areas (Section 3.2.8). The impacted upland native vegetation and agricultural types are common and abundant in the surrounding areas. The surrounding native upland pinyon-juniper woodlands would not be affected by piping of the ditches (removal of the water resource) because they are adapted to arid conditions. Construction activities would also directly disturb the staging areas, which are previously disturbed. Vegetation impacts to the previously-analyzed Aspen Canal, Spurlin Mesa Staging Area, and Center Lateral Staging areas did not rise to the level of significant, as documented in the respective EAs (Reclamation 2014, 2019a, 2019b).

During construction, dust from operating equipment and vehicles would also affect nearby vegetation, however increased dust would be minor and temporary, and therefore the impact to nearby vegetation would be minor and temporary. Across the entire Project, vegetation removal and construction footprints would be confined to the smallest portion of the ditch prism or construction ROW necessary for safe completion of the work. Construction of the Project would follow BMPs to further minimize temporary impacts, to protect water quality, and to further minimize dust and soil erosion.

Following construction disturbance, natural areas would be recontoured and either topsoiled and reseeded with a seed mix appropriate for the surrounding vegetation community or finished with sterile subsurface soil and unseeded, depending on the wishes of the underlying landowner. Where applicable, the seed mix for the natural areas would be a native drought-tolerant weed-free seed mix approved by Reclamation (Appendix A). Natural colonization of native plants on the reserved unweathered subsurface soil is preferable to reseeding on reserved topsoil in these areas. Redistributed topsoil has a low probability of success in germinating commercial seed mixes following construction, especially in drought conditions, and instead has historically germinated its own existing seed banks of ruderal weeds adapted to ground disturbance. Finishing the ground surface instead with unweathered subsurface soil would help eliminate the weed seed bank in the construction area. In accordance with the principles of ecological succession, surrounding native vegetation would colonize the construction corridor over a period of several years as the new topsoil becomes weathered. Because the upland native vegetation is abundant in the surrounding areas and would re-colonize the construction corridor, the impact to upland native vegetation would not rise to the level of significant.

Following pipeline construction, farmed areas would be contoured to the surrounding grade and reseeded with compatible hay or pasture seed mixes. Farmed areas would return to a condition similar to or better than their pre-construction condition within a year of construction, because they would be reseeded and integrated into the surrounding irrigation and management regime.

The 1.7 acres of wetland and riparian areas associated with the ditch sections involved with the Project would either be converted to upland vegetation or farmland, depending on their context, following construction. A habitat loss assessment was performed for the Project to quantify the fish and wildlife values that would be lost due to the conversion of these areas to uplands or farmlands by the Project (ERO 2023). The evaluation followed the methodology outlined in *Basinwide Salinity*

Control Program: Procedures for Habitat Replacement (Reclamation 2018). In accordance with the protocol, the habitat value is calculated for each affected wetland or riparian habitat area by multiplying its acreage by its habitat quality score, which is assigned based on evaluation of a series of ten physical and biological criteria. These criteria include vegetative diversity, vegetative stratification, presence of noxious weeds, overall vegetative condition, interspersion of open water with vegetation, connectivity and proximity of other wildlife habitat areas, wildlife use, uniqueness or abundance, water supply, and degree of human-caused alteration. The Project would result in the permanent loss of approximately 1.7 acres of riparian and wetland vegetation associated with the unlined ditches, which when combined with the scores from the 10 habitat quality criteria described above, is the equivalent of 7.4 habitat value units (ERO 2023). As stipulated by the Salinity Control Act, a habitat replacement site was established for the Applicant's previous original Grandview Canal Piping Project, and this site generated excess credit in the amount of 8 habitat value units, enough to cover the 7.4 habitat values units to be lost under the current Project. Therefore, there would be no net loss of fish and wildlife values (in this case, riparian and wetland vegetation) associated with implementation of the Project. Because there would be no net loss of riparian and wetland values associated with implementation of the Project, the effects of the loss of riparian and wetland vegetation would be insignificant from a habitat perspective.

No significant impacts to vegetation would occur as a result of the Project, because the construction footprint would be revegetated with upland plants found in the existing well-established adjacent plant communities, farmed areas in the construction footprint would be reseeded and returned to agricultural production, and riparian and wetland values related to the ditch sections involved with the Project would be maintained at the existing habitat replacement site.

The Proposed Action would contribute to the larger-scale loss of artificially sustained riparian and wetland areas collectively resulting from piping projects around the region. Consistent with the Colorado River Basin Salinity Control Act, habitat replacement projects compensate for the loss of riparian and wetland habitat values (see Appendix D).

Lining Alternative. The impacts to vegetation from the Lining Alternative are similar to the Piping Alternative, as described above, except some of the surface area in the construction footprint would remain as open water (lined ditch) following construction.

No significant impacts to vegetation would occur from implementation of the Lining Alternative, because the construction footprint would be revegetated with upland plants found in the existing well-established adjacent plant communities, farmed areas in the construction footprint would be reseeded and returned to agricultural production, and riparian and wetland values related to the ditch sections involved with the Project would be maintained at the existing habitat replacement site.

3.2.10 – Noxious Weeds

The geographic scope of analysis for noxious weeds is the approximately 5,202-acre area encompassing Grandview Mesa and a portion of the lower Smith Fork drainage, the context within which Project activities have the potential to affect this resource. The most conspicuous herbaceous noxious weeds present within the Project Area are whitetop (*Lepidium draba*), Russian knapweed (*Acroptilon repens*), and Canada thistle (*Cirsium arvense*) (ERO 2023). Non-native shrubs or trees scattered on the ditch banks include Russian olive (*Elaeagnus angustifolia*) and salt cedar (*Tamarisk* spp.) (ERO 2023). These weeds are common and widespread in the region, in disturbed areas such as roadsides, along ditch banks, in agricultural field margins, and in and around livestock corrals,

feeding areas, and stockwater ponds, etc. Noxious weeds are well-adapted to colonize both newly disturbed soils and historically disturbed soils more quickly than most native plants (Mohler 2001). Flowing water in irrigation ditches, as well as vehicles and livestock, are also vectors for the continued spread of noxious weeds in the Project Area. Although the Applicant occasionally conducts vegetation management along the ditch sections involved with the Project, noxious weeds are persistent in the Project Area, covering an estimated average of about 10 percent of involved ditch bank areas (ERO 2023), or the equivalent of approximately 0.97 acres (based on the 4 miles of involved ditch sections and an estimated average ditch prism width of 20 feet). The same noxious weed species are persistent and scattered across the geographic area of analysis in advantageous (disturbed) locations, along waterways, and in developed and agricultural areas of Delta County at large. The geographic analysis area spans approximately 8 square miles, with nearly the entire area in private agricultural and residential use. As a conservative estimate of the total acreage of noxious weeds in the geographic analysis area, Reclamation conducted the following analysis in GIS (Reclamation 2025a): the geographic analysis area has approximately 12.5 miles of mapped public roads, 41.8 miles of mapped waterways, and 108 separate legal parcels representing approximately separate farms, ranches, and residential properties with private roads, livestock pens, fencelines, crop margins, and other areas of persistent ground disturbance where noxious weeds may proliferate. Assuming 13 percent noxious weed cover within 20 feet of mapped public roads and waterways; assuming 0.5-acre of disturbed ground with 3 percent noxious weed cover associated with each of approximately 108 separate residences and agricultural operations; and assuming 7.5 percent cover of noxious weeds associated with agricultural crops, there are potentially 264 acres of noxious weed cover in the geographic analysis area, or the equivalent of 5 percent noxious weed cover across the approximately 5,202-acre area. Estimated percentages of noxious weed cover for different disturbance types were based on ERO (2023) and Loving (2022).

Delta County has weed control standards and a noxious weed management plan (Delta County 2020), though without an enforcement mechanism that triggers coordinated weed control at the county or local levels. Landowners in the geographic analysis area have varying levels of resources to dedicate to noxious weed management on their lands, and differences exist regarding effectiveness of management methods and which management methods are preferred (for instance, chemical versus biological or mechanical controls).

No Action Alternative: There would be no effect on noxious weeds from the No Action Alternative. Noxious weeds would continue to spread in the Project Area and on Grandview Mesa through common vectors, including flowing water associated with the ditch sections involved with the Project, surface soil disturbances, and vehicles, wildlife, and livestock moving through the Project Area.

Project (Piping Alternative): The piping component of the Project would create a construction footprint wider than the existing ditch prisms in some areas. Noxious weeds in the surroundings would spread opportunistically into these disturbed soils, or ground disturbance would trigger germination of the existing weed seed bank in the soils. A maximum of approximately 38 acres of new ground disturbance could be generated by the Project. If like the surrounding areas, noxious weeds colonize the disturbed ground at a rate of 10 percent cover, this would create an additional approximately 4 acres of noxious weed cover, or an overall equivalent increase of 0.1 percent in noxious weed cover, in the geographic analysis area (Reclamation 2025a). Design features (finishing techniques including the sterile topsoiling natural revegetation method; conventional finishing with reserved topsoil and reseeding; and the use of BMPs such as cleaning equipment prior to bringing it onsite (CHAPTER

4), would help slow or prevent invasive weeds from colonizing areas disturbed by construction activities. After construction and reclamation of the Project Area, noxious weed presence would be managed subject to agreements between the Applicant and individual landowners. While these design features and agreements would help slow the spread of invasive weeds, this analysis is conservative in that it assumes a total lack of weed control post-construction.

While ground disturbance associated with the Project could increase the total overall noxious weed cover in the geographic analysis area by an estimated 0.1 percent, noxious weeds are already present across an estimated 5.2 percent of the area. Removal of the ditch sections involved with the Project either by piping or decommissioning would eliminate segments of flowing open water in the ditch system, a key element of invasive seed transport. Certain segments of the ditch would no longer require regular maintenance, lowering the potential for the continued spread and establishment of weeds by vehicles and surface disturbances. Downgradient herbaceous and woody noxious weeds which rely on ditch seepage would no longer be supported. Despite these beneficial effects to noxious weed presence, noxious weeds would continue to be present, and would continue to have the potential to spread, in the Project Area and in the geographic area of analysis.

Because noxious weeds are currently present and have the continued potential to spread in the Project Area and on Crawford Mesa, their ongoing presence and potential to spread following the Project would not constitute a significant impact. The 0.1 percent overall estimated increase in noxious weed cover in the geographic analysis area as a result of the Project is a conservative estimate, and does not rise to the level of significant; therefore, no significant impacts to noxious weeds would occur as a result of the Project.

Lining Alternative. The impacts to noxious weeds from the Lining Alternative are similar to the Piping Alternative, as described above, except flowing surface water in the lined ditch sections would continue to provide a vector for spreading weed seeds in the area.

Because noxious weeds are currently present and have the continued potential to spread in the area of the involved ditch sections and geographic area of analysis, their ongoing presence and potential to spread following implementation of the Lining Alternative would not constitute a significant impact. A 0.1 percent overall estimated increase in noxious weed cover in the geographic area of analysis from implementing the Lining Alternative is a conservative estimate, and does not rise to the level of significant; therefore, no significant impacts to noxious weeds would occur.

3.2.11 – Wildlife Resources

The geographic scope of analysis for wildlife is the Project Area plus an approximately one mile buffer, the approximate area within which the Project has the potential to affect this resource. The riparian vegetation supported by the open ditches, in association with nearby irrigated land, and surrounding uplands with native shrublands and woodlands, provide nesting, breeding, foraging, cover, and movement corridors for an array of wildlife.

The Project Area falls within overall range of elk, mule deer, mountain lion, and black bear in CPW Game Management Unit 63. Grandview Mesa's array of irrigated agricultural lands and water resources (creeks, ditches, ponds) are attractive to deer and elk, especially during winter. The entire Project Area falls within elk severe winter range mapped by Colorado Parks and Wildlife (CPW 2025). The entire Project Area is within a CPW-mapped mule deer resident and year-round concentration area, and severe winter range (CPW 2025). The Grandview Mesa area of the Project is

also in a mule deer winter concentration area. Mule deer are relatively common and present year-round in the area, whereas the local elk herd is present only during winter.

A variety of small mammals, reptiles, amphibians, and birds inhabit the general Project Area (Armstrong et al. 2011; Hammerson 1999; Kingery 1998). The ditch sections in the Project Area create microclimate differences (Section 3.2.15) that support wetland and riparian vegetation, which in turn support a variety of wildlife dependent on wetland or riparian areas for some or all of their life cycle. Those that would be likely to use the ditch corridor or adjacent areas include small ground-dwelling mammals, such as badger, white-tailed prairie dog, cottontail rabbit, white-tailed jackrabbit, woodrat, several species of lizards, mice, voles, and shrews. Striped skunk, raccoon, red fox, coyote, bobcat, beaver, muskrat, western terrestrial garter snake, smooth green snake, Woodhouse's toad, northern leopard frog, several species of bats, and tiger salamander could also be using the ditch and the surrounding area. The most common raptors in the area are red-tailed hawk, northern harrier, golden eagle, and bald eagle. Red-tailed hawks and bald eagles roost in large cottonwoods along the ditches and around homes in the area. Red-tailed hawk nests are common across Grandview Mesa. Water birds, such as mallard ducks, teal, Canada geese, and great blue herons, use open water in the Project Area, and may occasionally chose ditch banks for nest sites. Fish (non-native trout species) are occasionally observed in the ditch segments involved with the Project.

The primary nesting season for migratory songbirds in the Project Area is April 1 through July 15. The core nesting season for raptors in the area is also April 1 through July 15; however, individuals—especially red-tailed hawk and great-horned owl—may begin courtship and nest construction as early as February 15 (CPW 2020). Golden eagles nest between December 15 and July 15, and bald eagles nest between October 15 and July 31 (CPW 2020). The entire Project Area lies within CPW-mapped bald eagle winter foraging range and the Smith Fork corridor is a bald eagle winter concentration area (CPW 2025). A nesting raptor survey conducted for the Project Area during Spring of 2020 and the Spring of 2023 identified three red-tailed hawk nests within 1/3 mile of the construction areas (the protective buffer distance recommended by CPW (CPW 2020).

Wildlife in the Project Area experiences a baseline level of disturbance from farming and ranching activities, rural residential activities, domestic dogs, and people and vehicles traveling on public and private roads. Agriculture, including farming and livestock grazing, are the primary land uses in the Project Area. The ditch sections are in a mix of residential and agricultural settings.

No Action Alternative: There would be no effect on wildlife resources from the No Action Alternative. Wildlife would continue to use the habitat and water resources in the area as in the past. Salt and selenium loading from the area would continue to affect aquatic dependent species.

Project (Piping Alternative): Construction would create incremental activity and ground disturbance in the Project Area, resulting in minor temporary impacts to mule deer and elk that may be present. There would be a short-term loss of vegetative cover in big game severe winter habitat until the areas are revegetated. However, the construction footprint of the Project represents less than approximately 0.06 percent of the total amount of elk and mule deer critical winter habitat in Game Management Unit 63, and this temporary loss of vegetative cover would result in negligible effects to big game critical winter habitat. Additionally, given the existing level of human disturbance and development (winter livestock feeding, other agricultural activities, residential activities, and road traffic) in the Project Area, big game would be somewhat habituated to the Project disturbances.

Furthermore, severe winter conditions (e.g., snow cover, extreme cold temperatures, excessively muddy conditions) would preclude construction activities during times when big game is most vulnerable. After implementation of the Project, water resources for big game and other wildlife would continue to exist in the Project Area at a rate of more than 4 sources per square mile (the rate recommended in CPW's comments on the nearby Crawford Clipper Ditch Company's Jerdon/West/Hamilton Piping Project). The sources include on-farm irrigation ditch laterals, ponds, and streams. The Project would also result in better availability of winter livestock water for the shareholders. Four on-farm stockwater outlets spread across the Lower Section of the Project Area would have the potential to be active during freezing months following Project implementation. These stock watering resources would also benefit big game. Since irrigated agricultural crops and water resources are major drivers of big game presence in the Project Area, the Project would not result in a long-term change in big game use or migratory patterns in the Project Area.

Construction impacts to small animals, especially burrowing reptiles, and small mammals, could include direct mortality and displacement during construction activities. However, these species and habitats are relatively common throughout the area. Based on the principles of ecological succession, small animals in the surrounding areas would recolonize the construction footprint following the disturbance, and population-level significant impacts would not occur. Fish occasionally finding their way in to the ditch system from the natural water sources diverted to the ditch may still find their way into the system; because this already occurs, there would be no change in fish entering the system.

There would be no direct effect to nesting songbirds in the Project footprint since pre-construction vegetation grubbing would occur outside the primary nesting season (potential nesting habitat including shrubs and trees along the ditch would be grubbed and removed outside the period of April 1 through July 15). Vegetation grubbing timing restrictions would be clearly noted on the Project construction drawings. Some cottonwood trees would die or be taken down as a result of the Project, which would remove some potential roosting and nesting habitat for raptors and other birds. As discussed in Section 2.2.8, habitat values would be maintained due to the habitat credits generated at GCIC's habitat replacement site. Because the value of this habitat would be maintained, these impacts would not rise to the level of significant.

There would be no effect to the three red-tailed hawk nests identified near the Project Area as they would be avoided with sensitive area buffers and construction timing restrictions per CPW recommendations (CPW 2020). Construction activities would not occur within 1/3 mile of an active red-tailed hawk nest from February 15 through July 15, with the following exceptions: 1) pipeline construction within 1/3 mile of a nest could begin during the period of February 15-July 15 so long as the construction activities were initiated prior to February 15, and operated on a daily basis until completion (it is assumed that red-tailed hawks that initiate nesting during ongoing construction activities are tolerant to such activities), or 2) a Reclamation-approved biologist determines that the nest is not active that breeding season. These timing restrictions and sensitive areas would be noted on Project construction drawings (see CHAPTER 4). If a new active raptor nest is discovered within 1/3 mile of the Project during construction, construction would cease until Reclamation could complete evaluations and consultations with FWS and CPW.

Bird, bat, reptile, and amphibian species dependent on wetland and riparian habitats for some or all of their life cycles would experience a long-term (greater than five years) loss of habitat due to the Project. Based on the principles of ecological succession, these species would continue to propagate

in the region and population-level significant impacts would not occur. The habitat value associated with the lost wetland and riparian habitat, including microclimate benefits, would be fully maintained at the existing habitat replacement site for the life of the project (50 years) (Sections 2.2.8, 3.2.9, and 3.2.15). Because the value of these species' habitat would be fully maintained in the general geographic area, there would not be a significant impact to bird, bat, reptile, and amphibian species resulting from the loss of the ditch-induced wetland and riparian habitat.

The existing habitat replacement site is near the Project Area and in the same watershed where the ditch system involved with the Project originates, contains a stream corridor, connects to other areas that have wildlife habitat value, and is consistent with the *Salinity Control Program Fish and Wildlife Habitat Evaluation Procedures* (Reclamation 2018). The ranges of many wildlife species in the area, including the local deer and elk herds, encompass both the Project Area and the existing habitat replacement site.

To further reduce the potential for effects to wildlife, pipeline trenches left open overnight during construction would be kept to a minimum and covered to reduce potential for entrainment of deer, elk, and other wildlife. Covers would be secured in place and strong enough to prevent wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps would be utilized.

No significant impacts to wildlife resources would occur as a result of the Project, because construction impacts would be temporary and relatively small in comparison with surrounding available habitat, timing restrictions would protect nesting birds during sensitive periods, disturbed upland habitats would be revegetated, wildlife watering resources would be maintained, and wetland and riparian habitat values would be maintained at the existing habitat replacement site.

Lining Alternative. The impacts to wildlife resources from the Lining Alternative would not differ from the Piping Alternative, as described above, with the following exception: Unlike the Piping Alternative, the Lining Alternative does not provide the added wildlife benefit of the delivery to the shareholders of winter stock water during freezing weather. Wildlife water distribution and availability would continue as it has in the past.

No significant impacts to wildlife resources would occur as a result of the Lining Alternative, because construction impacts would be temporary and relatively small in comparison with surrounding available habitat, timing restrictions would protect nesting birds during sensitive periods, disturbed upland habitats would be revegetated, wildlife watering resources would be maintained, and wetland and riparian habitat values would be maintained at the existing habitat replacement site.

3.2.12 – Threatened & Endangered Species

The species listed or proposed for listing as threatened or endangered under the Endangered Species Act of 1973, as amended, with the potential to be affected by the Project are the four listed Colorado River basin fish species: bonytail chub (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), the humpback chub (*Gila cypha*), and the razorback sucker (*Xyrauchen texanus*), Gunnison sage-grouse (*Centrocercus minimus*), silverspot (*Speyeria nokomis nokomis*), and gray wolf (*Canis lupus*), as well as the proposed-for-listing monarch butterfly (*Danaus plexippus*).

Other listed species identified by FWS as having the broad potential for their range to intersect the general Project Area are Mexican spotted owl (*Strix occientalis lucida*), yellow-billed cuckoo (*Coccyzus*

americanus), and Suckley's cuckoo bumble bee (*Bombus suckleyi*). These species were dismissed from analysis because there have been no documented occurrences in the Project Area, and/or there is no suitable habitat for these species in the Project Area.

None of the four listed Colorado River fishes occurs in the Project Area and the Project Area does not occur within or adjacent to designated critical habitat. However, because water depletions in the Gunnison Basin diminish backwater spawning areas for the Colorado River endangered fishes in downstream designated critical habitat, impacts to the listed fishes result from continuing irrigation practices in the Gunnison Basin. The total average historic depletion rate from the Applicant's system operations is estimated as 5,455 acre-feet per year.

The Upper Colorado River Endangered Fish Recovery Program ("Recovery Program") is a partnership of public and private organizations (including Reclamation) working since 1988 to recover the four species while allowing continued water uses and future water development. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. In 2009, Reclamation completed a consultation for changes in operation (aka "reoperation") of the Aspinall Unit (the three dams on the Gunnison River in the upper part of the Black Canyon of the Gunnison) in coordination with other federal water project dams in the Gunnison watershed to address the needs of the downstream endangered fishes by creating a flow regime that more closely represents the natural conditions. The consultation considered all other federal and non-federal existing water depletions in the Gunnison River Basin (an estimated annual average of 602,700 acre-feet per year), along with projected new future depletions of up to 37,900 acre-feet per year. Following the consultation, FWS issued the 2009 Gunnison River Basin Programmatic Biological Opinion (2009 PBO)(FWS 2009). The 2009 PBO found that although the reoperation of the Aspinall Unit and the continued operation of other federal and non-federal operations in the Gunnison Basin may adversely affect the endangered fishes and their critical habitat, the ongoing Recovery Program remains the reasonable and prudent alternative to avoid jeopardy to the endangered Colorado River fishes and avoid adverse modification of designated critical habitat. On an annual basis, the FWS determines whether the Recovery Program continues to make "sufficient progress to be the reasonable and prudent alternative to avoid the likelihood of jeopardy to the endangered fishes, and to avoid destruction or adverse modification of their critical habitat" for "existing depletions" (FWS 2024). Non-federal existing depletions such as those depletions from the operations of the Applicant are not required to consult with FWS under Section 7 of the ESA regarding the listed fishes until there is a "federal nexus" (e.g. a federally-funded project requiring the NEPA process and the analysis of impacts). At that time, a consultation with FWS is completed to consider whether the related depletions fit under the umbrella of the 2009 PBO and the Recovery Program. FWS notified Reclamation on June 25, 2024, that Reclamation-funded salinity control projects involving existing depletions perfected prior to 1988 and covered under the PBO are not required to further consult with FWS under Section 7 of the ESA regarding the listed fishes (FWS 2024). The Project involves both federal project water and an existing non-federal depletion perfected prior to 1988.

The Project Area is not within or near the occupied habitat of the Crawford sub-population of Gunnison sage-grouse (Reclamation 2025b). Designated critical habitat for the Crawford sub-population is roughly delineated on the north by the northern edge of Fruitland Mesa, and on the west and south by the north rim of the Black Canyon of the Gunnison, and on the east by the foothills of the West Elk Mountains (Figure 3). Designated critical habitat has two classifications:

occupied or unoccupied by the grouse. That part of the designated critical habitat extending from the northern edge of Fruitland Mesa roughly to Red Canyon to the south, is classified as unoccupied by sage-grouse. The east end of the Project intersects a small area of mapped unoccupied critical habitat in the Smith Fork Canyon.

The Project Area is mapped within the overall range of the silverspot (a butterfly) listed as threatened under the U.S. Endangered Species Act in February 2024. No documented populations of silverspot occur in or near the Project Area (FWS 2023). Reclamation conducted an informal technical consultation with FWS to confirm that the silverspot's larval host plant, bog violet, is not present in the Project Area (Reclamation 2025b).

The gray wolf is a wide-ranging habitat generalist and keystone predator that requires landscape-scale areas of minimal human disturbance and a sufficient prey base of large ungulates. Historically, wolves occurred across the state, but were extirpated (exterminated) from Colorado in the 1940s, mainly to protect domestic livestock. Documented reports of lone wolves sporadically dispersing into northern Colorado began in 2004, following the re-establishment of populations in Idaho, Montana, and Wyoming. In 2020, CPW confirmed an active pack of 6 wolves in northwestern (Moffat County) Colorado. In 2020, Colorado citizens voted to restore the gray wolf in Colorado by the end of 2023. In 2023, the U.S. Fish & Wildlife Service designated the Colorado wolf population as "experimental" under the U.S. Endangered Species Act, to provide management flexibility to CPW. CPW completed the first re-introduction of wolves in northern Colorado (Grand and Summit counties) in December 2023. The primary threats to wolves are vehicle collisions, illegal poaching, or accidental take (such as by poisoning targeted to other livestock predators such as coyote). The Project Area is not in gray wolf designated critical habitat.

While western Colorado has not been home to large numbers of monarch butterflies relative to other areas in its range, this proposed threatened species occurs in the Project Area during the warm season where milkweed plants are available in riparian areas, wetlands, irrigated pastures, and roadsides. Due to occasional ditch maintenance activities, riparian vegetation along ditches is occasionally cleared.

No Action Alternative: There would be no effect on Endangered Species Act-listed or species proposed for listing from the No Action Alternative. Historic depletions and salt and selenium loading from the Project Area would continue to affect the four Colorado River Basin listed fishes and their critical habitat downstream. Ditch maintenance activities would potentially continue to affect milkweed habitat, the larval host plant of the proposed threatened monarch butterfly.

Project (Piping Alternative): No change to the Applicant's historic annual consumptive use rate or historic water depletions from operations of their systems within the Colorado River Basin would occur as a result of the Project. Based on previously issued biological opinions, including the 2009 PBO, that all depletions within the Upper Colorado River Basin may adversely affect the four listed fish species and their critical habitat, it is determined that the Project may adversely affect the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker and their critical habitat. However, the Recovery Program ensures impacts to listed fishes or adverse modification of their designated critical habitat resulting from projects covered under the 2009 PBO would not result in jeopardy to the species. Reclamation previously consulted with FWS on the Applicant's total historical annual depletion rate in 2010 for the original Grandview Canal Piping Project (ES/GJ-6-CO-09-F-001-GP003 TAILS 65413-2010-F-0110). To ensure the Applicant's depletions

were covered under the 2009 PBO, the Applicant executed a Recovery Agreement with FWS in May 2010. Because the Applicant's depletions are covered under the 2009 PBO, the Project would not result in jeopardy to the species, and there would be no significant impact to the listed fishes or their designated critical habitat.

There would be no effect to Gunnison sage-grouse, because the Project does not overlap with the documented occupied range of Gunnison sage-grouse. The east end of the Project intersects a small area of mapped unoccupied critical habitat in the Smith Fork Canyon. The estimated construction footprint in this area is 3.6 acres. The construction footprint contains the existing ditch prism (with a margin of riparian vegetation dominated by coyote willow), and crosses an area vegetated with pinyon-juniper woodlands and an irrigated pasture on a relatively steep canyon slope and bench. The landcover composition in this area does not meet the physical and biological feature requirements of Gunnison sage-grouse critical habitat described at 79 FR 69311-69363. Following construction, the 3.6-acre area would be revegetated as upland woodlands and irrigated pasture, in a similar condition to its current condition. Therefore, there would be no adverse effect on critical habitat as a result of the Project.

Direct effects to individual monarch butterflies in larval or chrysalis stages on milkweed plants could occur during construction. Because the Project Area is not within a core migration area or core population area for the monarch butterfly, direct effects would not rise to the level of significant. The existing habitat replacement site would preserve host plant (milkweed) habitat, maintaining monarch butterfly habitat in the area. Therefore, the Project would not adversely or significantly affect the monarch butterfly's habitat or population in western Colorado. Proposed critical habitat for monarch butterfly is not in or near the Project Area.

There would be no effect to silverspot from the Project because the Project does not overlap with the documented population occurrences of silverspot, and its host plant is not present in the Project Area.

Given the current understanding that wolves are not present or documented in the Project Area, the Project would have no effect on the gray wolf. If wolves dispersed into or near the Project Area during construction of the Project, the Project activities would not measurably affect wolves, because the Project does not include a predator management program, and wolves could disperse away from the Project Area. Since the Project is not in gray wolf designated critical habitat, there would be no effect to gray wolf critical habitat.

No significant impacts to threatened and endangered species and their critical habitat would occur as a result of the Project, because the previous execution of a 2010 Recovery Agreement in accordance with the 2009 PBO ensures the Project has no significant impact on the Upper Colorado River listed fishes or their designated critical habitat; and because habitat for the monarch butterfly (proposed for listing) would be conserved at the existing habitat replacement site.

Lining Alternative. The impacts to threatened and endangered species from the Lining Alternative would not differ from the Piping Alternative, as described above.

No significant impacts to threatened and endangered species and their critical habitat would occur from the Lining Alternative, because the execution of a 2010 Recovery Agreement in accordance with the 2009 PBO ensures there is no significant impact on the Upper Colorado River listed fishes

or their designated critical habitat; and because habitat for the monarch butterfly (proposed for listing) would be conserved at the existing habitat replacement site.

3.2.13 – Cultural Resources

Cultural resources are defined as physical or other expressions of human activity or occupation. Such resources include culturally significant landscapes, prehistoric and historic archaeological sites, isolated artifacts or features, traditional cultural properties, Native American and other sacred places, and artifacts and documents of cultural and historical significance.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, mandates that Reclamation consider the potential effects of a proposed Federal undertaking on historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

The affected environment for cultural resources is identified as the area of potential effects (APE), in compliance with the regulations to Section 106 of the NHPA (36 CFR 800.16). The APE is defined as the geographic area within which Federal actions may directly or indirectly cause alterations in the character or use of historic properties. The APE for this Proposed Action includes the maximum limit of disturbance that could be physically affected by any of the proposed Project alternatives.

Alpine Archaeological Consultants conducted Class III cultural resource inventories of the Project Area. The geographic area of analysis for these inventories were the ditches and potential ground disturbance areas involved with the Project, plus a 100-foot buffer (e.g. the Area of Potential Effect). All ditch sections involved with the Project were inventoried, as well as access routes, borrow areas, and staging areas. The inventories resulted in the documentation of two ditches within the Project Area that are eligible for listing in the National Register of Historic Places (NRHP).

There is an ongoing trend of piping earthen irrigation ditches in the region (see Figure 2), many of which are eligible for listing in the NRHP. This conversion is typically viewed as an adverse effect on the eligible cultural resource.

No Action Alternative: The No Action Alternative would have no effect on cultural resources. The cultural resources documented as eligible for listing in the NRHP would continue to exist in their current condition on the landscape.

Project (Piping Alternative): As a result of the Class III cultural resources inventory of the Project Area, and in consultation with the Colorado State Historic Preservation Officer (Colorado SHPO), Reclamation has determined that the Project would have an adverse effect on the Grandview Canal, which is a historic property eligible for listing in the NRHP. A Memorandum of Agreement (MOA) has been executed between Reclamation and the Colorado SHPO, with the Applicant participating as an invited party, regarding the management of cultural resources related to the Project. The MOA outlines stipulations designed to maintain the cultural heritage of irrigation history through public interpretation and/or documentation (Appendix B). An amendment to the MOA (Appendix B) has also been executed between Reclamation and the Colorado SHPO to extend the deadline to complete the MOA requirements in Stipulations I.A.c and III. Maintaining the cultural heritage of irrigation history would ensure that piping the ditches would not result in the loss of knowledge of

early irrigation systems, their design, or reduce the ability to gain knowledge of early irrigation systems into the future. Because the value of the cultural resources related to the Project would be conserved, there would be no significant impacts to cultural resources as a result of implementing the Proposed Action.

No significant impacts to cultural resources would occur as a result of the Project, because the cultural heritage of irrigation history would be maintained.

Lining Alternative. The impacts to cultural resources from the Lining Alternative would not differ from the Piping Alternative, as described above.

No significant impacts to cultural resources would occur as a result of the Lining Alternative, because the cultural heritage of irrigation history would be maintained.

3.2.14 – Soils & Farmlands of Agricultural Significance

The Project Area (Figure 1) is the geographic scope of analysis for soils and farmlands of agricultural significance, the context within which Project activities have the potential to affect this resource. The soils units mapped by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in the Project Area are generally clay loams that have Mancos shale parent material and are a source of salinity in irrigation water in the region. Several soils in the Project Area are agriculturally significant since they are classified by NRCS (NRCS 2022) as "prime farmland if irrigated," "farmland of unique importance," or "farmland of statewide importance" under the Farmland Protection Policy Act.

Soils in the area are also highly prone to erosion, especially where irrigation ditches contour through Mancos shale-derived soils and along slope faces.

No Action Alternative: The No Action Alternative would have no effect on soils characterized by NRCS as agriculturally significant. Farmlands in the Project Area would continue to produce as in the past. Salinity loading from irrigation water contact with saline soils in the involved ditches would continue as it has in the past.

Project (Piping Alternative): Under the Piping Alternative, installation of the buried pipelines would temporarily disturb soils in the construction footprint. Staging activities would take place on existing irrigated pastures or existing disturbed areas. Project activities would cause temporary disturbance to soils that are either not in irrigated agricultural production, or soils directly adjacent to irrigated agricultural lands, or soils of irrigated lands. Some currently farmed agriculturally significant soils would be temporarily directly disturbed by the Project, but would be put back into production prior to the following irrigation season. No farmlands would be permanently altered or removed from production as a result of the Project, and no interruption to agricultural production would occur. Therefore, there would be no significant impact to soils, farmlands, or agricultural production as a result of implementing the proposed action.

The ditch sections involved with the Project also convey irrigation water to agriculturally significant soils downstream of the Project Area; however, no change to or effect on the configuration of irrigated lands would occur because of the Project. No part of the irrigation season would be lost during implementation of the Project.

Soil erosion from irrigation water conveyances would be substantially reduced where ditch reaches are proposed for replacement with buried pipe. Therefore, no adverse effects on soil erosion would occur due to implementation of the Project.

Following piping, wetland and riparian microclimate conditions in the soils adjacent to the ditches involved with the Project would be converted to upland conditions (Section 3.2.15). Wetland and riparian microclimate conditions are conserved at the existing habitat replacement site (Section 3.2.9). Because there would be no net loss of wetland and riparian soil microclimate conditions associated with implementation of the Project, the effects of the loss of these microclimate conditions in the Project Area would be insignificant.

No significant impacts to soils & farmlands of agricultural significance would occur as a result of the Project, because no soils or farmlands of agricultural significance would be permanently removed from production. Soils affected by construction would be protected from erosion with BMPs and agricultural soils returned to production the following growing season.

Lining Alternative. The impacts to soils and farmlands of agricultural significance from the Lining Alternative would not differ from the Piping Alternative, as described above.

No significant impacts to soils & farmlands of agricultural significance would occur as a result of the Lining Alternative, because no soils or farmlands of agricultural significance would be permanently removed from production. Soils affected by construction would be protected from erosion with BMPs and agricultural soils returned to production the following growing season.

3.2.15 – Microclimate

The geographic scope of analysis for microclimate is Grandview Mesa and a part of the lower Smith Fork drainage extending from the initiation point of the Project to a point approximately 2 miles downstream where the existing Grandview Canal contours out of the Smith Fork drainage, and is a total of 5,202 acres. This area is the context within which physical disturbance or changes to microclimate could take place because of Project construction.

There are differences in soil moisture content between soils in the saturation zone of irrigation ditches and other water bodies and surrounding uplands. Saturated soils along ditch margins and other waterbodies, and the wetland or riparian vegetation types they support, create a microclimate that is different than surrounding uplands, with higher humidity and cooler air and soil temperatures. These conditions in turn provide habitat for species requiring wetland and/or riparian habitat for all or parts of their life cycles (Section 3.2.11). Riparian and wetland vegetation, including cottonwoods, provide localized shade and cooling effects from evapotranspiration. The geographic analysis area has approximately 287 acres of wetland and riparian areas (Sections 3.2.3 and 3.2.9), and the Project Area has about 1.7 acres of wetland and riparian areas—including about 0.52 acres of cottonwood canopy (ERO 2023).

Agricultural irrigation has significant microclimate effects in arid and semi-arid regions. "In warm, dry regions, irrigation increases the amount of water available for plants to release into the air through a process called evapotranspiration. When the soil is wet, part of the sun's energy is diverted from warming the soil to vaporizing its moisture, creating a cooling effect" (Puma & Cook 2010). As such, irrigated hay meadows and grass pastures (as well as irrigated grass lawns) create a

microclimatic moderating or cooling effect during the warm season. The geographic analysis area has approximately 3,315 irrigated acres (Section 3.2.9).

No Action Alternative: The No Action Alternative would have no effect on microclimate. Surface hydrology (including irrigation), soil, and vegetation aspects of microclimate would continue to function as they have in the past within the Project Area.

Project (Piping Alternative): The Project would affect 1.7 acres of wetland and riparian vegetation and soils related to Grandview Canal in the geographic analysis area. To contextualize the vegetation impact of the Project on the microclimate of the area, Reclamation performed a spatial analysis in GIS (Reclamation 2025a) using publicly-available landcover and irrigated land datasets. The geographic analysis area encompasses approximately 287 acres of riparian and wetland landcover types, constituting 5.5 percent of the area. By contrast, the agricultural landcover type (irrigated croplands and pastures) is estimated as 3,315 acres, or nearly 64 percent of the landcover in the geographic analysis area. Because irrigated hay meadows and pastures function similarly to wetlands and riparian areas in terms of evapotranspiration and wetted soil cooling effects (Puma & Cook 2010), this analysis suggests that irrigated agricultural lands are contributing the majority of the microclimate cooling effect to geographic analysis area, rather than the approximately 287 acres of wetland and riparian vegetation or the 1.7 acres of wetland and riparian vegetation associated with the Project's construction corridor.

The 1.7 acres of wetland and riparian vegetation, including the 0.52 acre of cottonwood trees (ERO 2023), that would be impacted by the Project, constitute approximately 0.03 percent of the geographic analysis area. Approximately 1/3 of this area would be converted to irrigated farmland, and approximately 2/3 of this area portion would be converted to uplands, resulting in a loss of microclimate benefits to habitat in particular spatial locations. These microclimate habitat benefits lost in the Project Area would be maintained at the existing habitat replacement site.

Because the preponderance of microclimate benefits in the geographic analysis area are provided by irrigated agricultural lands, and no irrigated agricultural lands would be lost as a result of the Project (Section 3.2.14), impacts to microclimate would not rise to the level of significant. The loss of microclimate benefits in the Project Area from loss of riparian and wetland vegetation due to the Project would not create a significant impact to microclimate because those benefits would be maintained at the existing habitat replacement site.

Lining Alternative. The impacts to microclimate from the Lining Alternative would not differ from the Piping Alternative, as described above.

Because the preponderance of microclimate benefits in the geographic analysis area are provided by irrigated agricultural lands, and no irrigated agricultural lands would be lost as a result of the Lining Alternative (Section 3.2.14), impacts to microclimate would not rise to the level of significant. The loss of microclimate benefits in the Project Area from loss of riparian and wetland vegetation due to the Lining Alternative would not create a significant impact to microclimate because those benefits would be maintained at the existing habitat replacement site.

3.3 – Summary

Table 6 provides a summary of environmental impacts, including cumulative impacts, for each the resources evaluated in this EA. Resource impacts are outlined for both the No Action and the two Action Alternatives. As described throughout Chapter 3, environmental impacts of the Action Alternatives were not determined to be significant.

Table 5. Summary of Impacts for the No Action Alternative and the Action Alternatives.

Resource	**Impacts: No Action Alternative**	**Impacts: Action Alternatives**
Water Rights and Use (Section 3.2.1)	No Effect; neither Action Alternative would be completed, and ditch seepage and irrigation inefficiencies would continue as they have in the past, and winter stock water would continue to be undeliverable during freezing weather conditions.	With either Action Alternative, the Applicant would have the ability to better manage irrigation water with efficiencies gained from eliminating seepage by improving the system. Winter stock water would be unavailable for some shareholders for part of one winter season during construction. Following construction of the Project (Piping Alternative), winter stock water would be delivered to most shareholders throughout the winter season, including during periods of freezing weather. Following construction of the Lining Alternative, winter stock water would not be delivered during periods of freezing weather. The Action Alternatives contribute to the growing amount of piped and lined irrigation conveyances in the region, which are collectively reducing water seepage and improving irrigation water delivery efficiency on a larger scale.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Water Quality (Section 3.2.2)	No Effect; neither Action Alternative would be completed, and salt and selenium loading from the Project Area would continue to affect water quality in the Colorado River Basin.	An estimated salt loading reduction of 4,421 tons per year to the Colorado River Basin would result from implementation of either of the Action Alternatives. Both Action Alternatives would reduce selenium loading into the Gunnison River (the amount has not been quantified). Improved water quality would benefit downstream aquatic species by reducing salt and selenium loading in the Gunnison and Colorado rivers. The beneficial effects of improved water quality resulting from either of the Action Alternatives would contribute to the regional efforts underway to reduce salinity and selenium in the lower Gunnison and Colorado River watersheds. Both Action Alternatives would affect waters under the jurisdiction of CWA Section 404 (the ditches themselves) and disturb irrigation-induced wetland and riparian vegetation associated with the ditch sections. Both action alternatives would contribute to ongoing regional efforts to improve water quality and reduce salinity basinwide.
Hydrology (Section 3.2.3)	No Effect, because nothing would occur which would alter the surface hydrology, estimated groundwater recharge, or domestic well permits in the area.	The distribution of surface water would change in the Project Area as a result of implementing either of the Action Alternatives. Because the excess credits at the existing habitat replacement site would ensure no net loss of riparian and wetland values associated with implementation of either of the Action Alternatives, the effects of the loss of riparian/wetland hydrology adjacent to the involved ditches would be insignificant. Because the estimated amount of groundwater recharge into the two HUC-12 sub-watershed areas in the vicinity would not change, there would be no significant impact to groundwater recharge as a result of implementing the either Action Alternative. Because neither Action Alternative would alter natural sources of groundwater, there would be no significant adverse effect on domestic well permits near the Project Area. Either Action Alternative would contribute to a regional trend resulting in relocation of artificially-created riparian and wetland hydrology values from earthen irrigation conveyances to habitat replacement sites.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Air Quality (Section 3.2.4)	No Effect; neither Action Alternative would be completed and the ditch sections would continue to operate in their current condition and dust and exhaust would occasionally be generated by vehicles and equipment conducting routine maintenance and operation.	Exhaust and dust from construction activities would have a minor, short-term effect on the air quality in the immediate area. Following construction of either Action Alternative, impacts to air quality from routine maintenance and operation activities along the pipeline or lined ditch corridors would be similar or less in magnitude to those currently occurring for the existing ditch. If other construction projects occur concurrently with either Action Alternative, the cumulative impact on air quality in the area would be temporary, the contractors completing the work would be required to follow State of Colorado air quality regulations established to protect the airshed from significant impacts (5 CCR 1001-5), and the area would remain in attainment for any criteria pollutants in Delta County.
Public Access, Transportation & Safety (Section 3.2.5)	No Effect; neither Action Alternative would be completed and the ditches would continue to operate in their current condition and the baseline status of public safety, transportation routes, utilities, and public access in the vicinity would remain unchanged.	Some short-term disruption of traffic at the involved public roads would occur for either Action Alternative when equipment and materials are hauled into the Project location, and when piped crossings are constructed across public roads. If relocation or raising of utilities is necessary during construction, a brief interruption of utility services would occur. Under the Lining Alternative, the safety risks associated with sources of open, moving water would remain following implementation.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Property Values (Section 3.2.6)	No Effect; neither Action Alternative would be completed and the ditch sections would continue to operate in their current condition, with no impact to property values.	While the market value of a property may shift positively or negatively due to the personal preferences of potential buyers, the value of a property from the County Assessor's perspective would not change as a result of piping or lining the ditch sections. No significant impacts to property values would occur as a result of either Action Alternative, because piping or lining the ditch sections would not affect the factors that are considered during the County Assessor's valuation process.
Noise (Section 3.2.7)	No Effect; there would be no construction noise related to ditch piping or lining in the Project Area, and noise related to ditch operation and maintenance activities would continue as it has in the past.	Project construction activities under either Action Alternative would generate a temporary source of noise audible to residents near the area. If other construction projects occur concurrently with either Action Alternative, the incremental impact on noise in the area would be short-term would not raise the noise level of the area above the moderate noise baseline.
Visual Resources (Section 3.2.8)	No Effect; the baseline level of visual disturbance in the Project Area associated with residential and farmstead developments, local ranching and farming activities, local construction projects, and the Applicant's operation and routine maintenance of the ditch sections would continue.	Machinery would be operating on the landscape and highly visible from public roads in certain locations on a spatially incremental basis during construction of either Action Alternative. Following construction of the Piping Alternative, the disturbance footprint would be a linear area of bare ground, rather than an open earthen ditch. Following construction of the Lining Alternative, the disturbance footprint would be the shotcrete-lined ditch sections, with shotcrete edges visible alongside the open water of the ditch. Within a few growing seasons, revegetation would help the disturbed ground blend with the surroundings. Overall, the long-term level of change to the visual characteristics of the landscape in and around the Project Area during and following construction of either Action Alternative would be minor and not out of character with the surrounding landforms or with the rural and agricultural character of the vicinity.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Vegetation (Section 3.2.9)	No Effect; the Applicant would continue to routinely manage vegetation along the ditch sections, which includes periodic mechanical clearing with heavy equipment, burning, or application of herbicides.	Construction of either Action Alternative would result in a minor impact to upland native vegetation located within the construction corridor. The impact would be evident in the Project Area for a period of several years. Either Action Alternative would result in the permanent loss of approximately 1.7 acres of riparian and wetland vegetation associated with the unlined ditch sections. The value of the habitat loss which would occur is 7.4 habitat units (ERO 2023). The existing habitat replacement site would fully maintain the value of the fish and wildlife values to be lost as a result of either of the Action Alternatives. The Proposed Action would contribute to a regional trend resulting in relocation of artificially-created riparian and wetland values from earthen irrigation conveyances to habitat replacement sites.
Noxious Weeds (Section 3.2.10)	No Effect; neither Action Alternative would be completed and noxious weeds would continue to exist in the general area, and flowing water in the irrigation ditch sections, along with animals traveling along the ditch corridor would continue to serve as vectors for the spread of noxious weeds in the area.	The Piping Alternative would remove segments of open water, a key element of invasive seed transport. Under the Piping Alternative, finishing the ground surface with subsurface soil would help eliminate the weed seed bank in the construction area. Piped sections of the ditch would no longer require regular maintenance, lowering the potential for the continued spread and establishment of weeds. Under both Action Alternatives, downgradient herbaceous and woody noxious weeds which rely on ditch seepage would no longer be supported. Under either Action Alternative, noxious weeds would continue to be present throughout the Project Area. The Piping Alternative, along with other salinity control piping projects in the region, would remove an important vector of weed seed transport in the vicinity—open water. Under both Action Alternatives, seeps from the earthen ditch sections that currently support herbaceous and woody noxious weeds would be dried and the cumulative ability of the environment to support these weeds would be diminished.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Wildlife Resources (Section 3.2.11)	No Effect; neither Action Alternative would be completed and wildlife would continue to use the area as in the past. Salt and selenium loading from the Project Area would continue to affect aquatic dependent species.	Construction of either Action Alternative would create incremental activity and ground disturbance throughout the Project Area, resulting in minor temporary impacts to mule deer and elk. There would be a short-term loss of vegetative cover in big game critical winter habitat until the areas are revegetated. Construction impacts to small animals, especially burrowing amphibians, reptiles, and small mammals, would include direct mortality and displacement during construction activities. Bird, bat, reptile, and amphibian species dependent on wetland and riparian habitats would experience a long-term (greater than five years) loss of habitat due to either Action Alternative. However, the habitat value associated with the lost wetland and riparian habitat would be fully maintained at the existing habitat replacement site. Unlike the Piping Alternative, the Lining Alternative does not provide the added wildlife benefit of the delivery to the shareholders of winter stock water during freezing weather, and wildlife water distribution and availability under the Lining Alternative would continue as it has in the past. Both Action Alternatives would contribute to a regional trend resulting in the relocation of artificially-created riparian and wetland values from earthen irrigation conveyances to habitat replacement sites.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Threatened & Endangered Species (Section 3.2.12)	Neither Action Alternative would be completed, and historic salt and selenium loading from the Project Area would continue to affect the four Colorado River basin listed fishes and their critical habitat downstream.	Both Action Alternatives may adversely affect the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker and their critical habitat. However, the Applicant's historic depletions are covered under the 2009 PBO following the execution of a 2010 Recovery Agreement between the Applicant and FWS for a different project. The Recovery Program ensures impacts to listed fishes or adverse modification of their designated critical habitat resulting from projects covered under the 2009 PBO would not result in jeopardy to the species. The reduction in selenium loading to the Colorado River and Gunnison River basins resulting from both Action Alternatives would contribute incrementally to the beneficial effects of the Gunnison Basin Selenium Management Program in improving water quality within designated critical habitat for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado River and lower Gunnison River basins.
Cultural Resources (Section 3.2.13)	No Effect: neither Action Alternative would be completed, and the cultural resources documented as eligible for listing in the NRHP would continue to exist in their current condition on the landscape.	Both Action Alternatives would have an adverse effect on NRHP eligible cultural resources. An MOA (Appendix B) between Reclamation, and the Colorado SHPO, with the Applicant participating as an invited party, outlines stipulations designed to conserve the value of the eligible cultural resources. Both Action Alternatives would contribute to an area-wide adverse effect on NRHP eligible cultural resources. The value of the eligible cultural resources in the area which have been or may be affected due to federally-funded irrigation piping and ditch lining projects have been and would continue to be maintained due to the Project stipulations developed with the Colorado SHPO, and therefore the adverse incremental effect either Action Alternative on cultural resources would not rise to the level of significant.

Resource	Impacts: No Action Alternative	Impacts: Action Alternatives
Soils & Farmlands of Agricultural Significance (Section 3.2.14)	No Effect; neither Action Alternative would be completed and soils and farmlands of significance in the Project Area would continue to produce as in the past. Salinity loading from deep percolation of irrigation water through saline soils along the ditches would continue.	The construction of either Action Alternative would temporarily disturb soils in or near the previously-disturbed ditch prisms. Construction activities would cause temporary disturbance to soils that are either not in irrigated agricultural production, or soils directly adjacent to irrigated agricultural lands, or irrigated lands. Some currently farmed agriculturally significant soils would be temporarily directly disturbed by either Action Alternative, but would be put back into production prior to the following irrigation season. No farmlands would be permanently altered or removed from production as a result of either Action Alternative, and no interruption to agricultural production would occur. Soil erosion from irrigation water conveyances would be substantially reduced where ditch reaches are either piped or lined. Either Action Alternative would contribute to the growing amount of piped or lined irrigation conveyances in the region, which are collectively having a beneficial effect on the reduction of soil erosion on a larger scale.
Microclimate (Section 3.2.15)	No Effect; neither Action Alternative would be completed and the surface hydrology, soil, and vegetation aspects of microclimate would continue to function as they have in the past within the Project Area.	Conversion of the open, earthen ditches to pipelines or lined ditches would convert areas with wetland or riparian soils, hydrology, and vegetation (elements contributing to microclimate differences) to irrigated farmlands or uplands. The open water aspect of the ditches would remain following the Lining Alternative. However, the preponderance of microclimate benefits in the Project Area and on Grandview Mesa and in the lower Smith Fork drainage are provided by irrigated agricultural lands. Because no irrigated agricultural lands would be lost as a result of either of the Action Alternatives, there would be no significant impact to microclimate.

CHAPTER 4 – ENVIRONMENTAL COMMITMENTS

This section summarizes the design features, BMPs, conservation measures, and other requirements (collectively, "Environmental Commitments") developed to further lessen the potential adverse

insignificant effects of the Project. The actions in the following environmental commitment list would be implemented as an integral part of the Project and shall be included in any contractor bid specifications.

Note that in the event there is a change in the Project description, or any construction activities are proposed outside of the inventoried Project Area or the planned timeframes outlined in this EA, additional environmental review by Reclamation would be required to determine if the existing surveys and information are adequate to evaluate the changed project scope. Additional NEPA documentation may be required.

Table 6. Environmental Commitments

Type	**Environmental Commitment**	**Affected Resource**	**Authority**
Construction Contractor Plan or Certification Requirement	A Spill Response Plan shall be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies.	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	A Stormwater Management Plan shall be prepared and submitted to CDPHE by the construction contractor prior to construction disturbance.	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	A CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES) shall be obtained from CDPHE by the construction contractor prior to construction disturbance (regardless of whether dewatering would take place during construction).	Water Quality	Clean Water Act of 1972 as amended
Construction Contractor Plan or Certification Requirement	Certification under CDPHE Water Quality Division Construction Dewatering Discharges Permit COG070000 shall be obtained by the construction contractor prior to any dewatering activities related to construction.	Water Quality	Clean Water Act of 1972 as amended

Type	Environmental Commitment	Affected Resource	Authority
Construction Contractor Plan or Certification Requirement	Any construction, access, or use permits required by the Delta County Planning Department, County Engineering and County Road & Bridge District #3, shall be obtained in advance of road crossings.	Access, Transportation & Safety	County Ordinances and Regulations
Construction Contractor Requirement	Required (if any) air quality emissions inventories, record-keeping, or reporting for construction equipment shall be on file with CDPHE prior to commencing construction.	Air Quality	Clean Air Act of 1963 and 5 CCR 1001-5 Part I.B.10 (Allowable Emissions), Part II.A (Air Pollutant Emission Notices for New, Modified, and Existing Sources), Part II.D (Exemptions from Air Pollutant Emission Notice Requirements
General NEPA Compliance	To satisfy the requirements of RGP-5, submit the following package to the Army Corps at least 30 days in advance of construction: (1) documentation for compliance with the Endangered Species Act and National Historic Preservation Act and/or the lead Federal Agency NEPA document containing the same, (2) a project description, (3) project plans, and (4) a location map."	Wetlands	RGP-5, Section 404, Clean Water Act of 1972 as amended
General BMP 1	Construction limits shall be clearly flagged or marked onsite to avoid unnecessary plant loss or ground disturbance. No grading or blading shall occur inside the Project ROW other than that necessary within the actual construction footprint.	Vegetation, Weeds, Habitat, Wildlife	Delta County Weed Management Plan (Delta County 2020

Type	Environmental Commitment	Affected Resource	Authority
General BMP 2	All equipment shall be cleaned before it is brought to the construction area, to minimize transport of new weed species to the construction area.	Vegetation, Weeds, Habitat, Wildlife	Delta County Weed Management Plan (Delta County 2020
General BMP 3	Prior to construction, vegetative material shall be removed by mowing or chopping, and either reserved for mulch onsite, or hauled to the County landfill or to a staging area to be burned, chipped, and/or mulched. Stumps shall be grubbed and hauled to the County landfill or a proposed staging area to be burned.	Soil, Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020
General BMP 4	Vegetation removal shall be confined to the smallest portion of the Project Area necessary for completion of the work.	Soil, Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020
General NEPA Requirement	Tree grubbing and vegetation removal in the Project Area shall avoid the primary nesting season of migratory birds (April 1 – July 15). This timing restriction shall be noted on Project construction drawings.	Wildlife	Migratory Bird Treaty Act of 1918
General BMP 5	Where required, topsoil, or top material, shall be stockpiled and then redistributed as top dressing after completion of construction activities.	Soil, Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020
General BMP 6	Straw wattles, silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures shall be used to prevent erosion from entering water bodies during construction.	Water Quality	Clean Water Act of 1972 as amended

Type	Environmental Commitment	Affected Resource	Authority
General BMP 7	Any concrete pours shall occur in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing shall be contained and treated or removed for off-site disposal.	Water Quality	Clean Water Act of 1972 as amended
General BMP 8	The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Project in an appropriate manner that prevents them from contaminating soil and water resources.	Water Quality, Soil	Clean Water Act of 1972 as amended
General BMP 9	Equipment shall be inspected daily and immediately repaired as necessary to ensure equipment is free of petrochemical leaks.	Water Quality, Soil	Clean Water Act of 1972 as amended
General BMP 10	Ground disturbances and construction areas shall be limited to only those areas necessary to safely implement the Project.	Soil, Vegetation, Weeds, Habitat, Wildlife	Archaeological Resources Protection Act of 1979; Paleontological Resources Preservation Act of 2009
General BMP 11	Pipeline trenches left open overnight shall be kept to a minimum and covered to reduce potential for hazards to the public and to wildlife. Covers shall be secured in place and strong enough to prevent people, livestock, or wildlife from falling through. Where trench covers would not be practical, wildlife escape ramps shall be used.	Wildlife, Public Safety	C.R.S. 33-1-101 to 125 Parks and Wildlife Article 1: Wildlife
General BMP 12	Typically, 30 to 500 feet of trench would be left open overnight during construction. Each evening, the end of the trench would be sloped to create an escape ramp for wildlife.	Wildlife, Public Safety	C.R.S. 33-1-101 to 125 Parks and Wildlife Article 1: Wildlife

Type	Environmental Commitment	Affected Resource	Authority
General NEPA Compliance	A barricade shall be placed between the construction zone and a sensitive historical structure identified during a cultural resources survey for the Project. The location of the sensitive historical structure shall be clearly marked on the construction drawings.	Cultural Resources	National Historic Preservation Act of 1966
General NEPA Compliance	If previously undiscovered cultural or paleontological resources are discovered during construction, construction activities must immediately cease in the vicinity of the discovery and Reclamation must be notified. In this event, the SHPO shall be consulted, and work shall not be resumed until consultation has been completed, as outlined in the Unanticipated Discovery Plan in the MOA (see Appendix B of the EA). Additional surveys shall be required for cultural resources if construction plans, or proposed disturbance areas are changed.	Cultural Resources	National Historic Preservation Act of 1966 Archaeological Resources Protection Act of 1979 Paleontological Resources Preservation Act of 2009
General NEPA Compliance	In the event that previously undocumented threatened or endangered species are encountered during construction, the contractor shall stop construction activities until Reclamation has consulted with FWS to ensure that adequate measures are in place to avoid or reduce impacts to the species.	Threatened & Endangered Species	Endangered Species Act of 1973 as amended
General NEPA Compliance	Construction activities shall take place only in accordance with the schedule restrictions outlined in the EA.	Wildlife	Migratory Bird Treaty Act of 1918; Bald and Golden Eagle Protection Act of 1940

Type	Environmental Commitment	Affected Resource	Authority
General NEPA Compliance	To avoid disturbance to nesting raptors, construction activities within species-specific CPW-recommended (CPW 2020) buffer distances are time-restricted as follows: Red-tailed hawk: no construction activity within 1/3 mile of a nest February 15 through July 15, with the following exceptions: 1) pipeline construction within 1/3 mile of a nest could begin during the period of February 15-July 15, so long as the construction activities were initiated prior to February 15, and operated on a daily basis until completion (it is assumed that red-tailed hawks that initiate nesting during ongoing construction activities are tolerant to such activities), or 2) a Reclamation-approved biologist determines that the nest is not active that breeding season. These timing restrictions and sensitive areas shall be noted on Project construction drawings.	Wildlife	Migratory Bird Treaty Act of 1918 Bald and Golden Eagle Protection Act of 1940
General NEPA Compliance	If a previously unknown active raptor nest is discovered within 1/2 mile of the Project Area during construction, construction shall cease until Reclamation can complete consultations with FWS and CPW.	Wildlife	Migratory Bird Treaty Act of 1918 Bald and Golden Eagle Protection Act of 1940
General NEPA Compliance	The raptor nest survey shall be repeated in Spring 2026 for construction work anticipated to continue past October 15, 2026, and on a three-year cycle thereafter. The survey must only be repeated for the remaining construction areas, within the required buffer distances explained in CPW 2020.	Wildlife	Migratory Bird Treaty Act of 1918

Type	Environmental Commitment	Affected Resource	Authority
General BMP 13	Following construction, except where other finishing techniques indicated on the construction drawings, all disturbed areas shall be smoothed with tracked equipment (without back dragging blade), shaped, and contoured to as near to their pre-project conditions as practicable.	Soil, Vegetation, Weeds, Habitat	Clean Water Act of 1972 as amended
Design Feature	All drainage patterns that intersect the ditch shall be shaped to their natural flow patterns following ditch piping.	Soil, Vegetation, Habitat	Clean Water Act of 1972 as amended
General BMP 14	All equipment shall be cleaned before it is transported to another job site, to avoid introducing weed species from the construction area to another job site.	Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020
General BMP 15	Re-seeding, where conducted in areas surrounded by native vegetation, shall occur following construction at appropriate times and with appropriate methods, using a drought tolerant, weed-free seed list approved by Reclamation (see Appendix A of the EA). The Applicant shall coordinate with private landowners to reseed any disturbances to irrigated areas.	Soil, Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020
General BMP 16	Weed control shall be implemented by Applicant or its contractor in accordance with any agreements with individual landowners.	Soil, Vegetation, Weeds, Habitat	Delta County Weed Management Plan (Delta County 2020

CHAPTER 5 – CONSULTATION AND COORDINATION

5.1 – Introduction

Reclamation's public involvement process presents the public with opportunities to obtain information about a given project, and allows interested parties to participate in the project through written comments. This chapter discusses public involvement activities taken to date for the Proposed Action.

5.2 – Public Involvement

Notice of the public review period and availability of the Draft EA will be distributed to private landowners adjacent to the Proposed Action, and the organizations and agencies listed in Appendix C.

5.3 – Distribution

The publicly-available electronic version of the Draft EA will be available on Reclamation's website, and will meet the technical standards of Section 508 of the Rehabilitation Act of 1973, so that the document can be accessed by people with disabilities using accessibility software tools.

CHAPTER 6 – PREPARERS

The following list contains the individuals who participated in the preparation of this EA.

Table 7. List of Preparers

Name	Agency	Title	Areas of Responsibility
Jennifer Ward	Reclamation	Environmental Group Chief	EA review, general authorship, cultural resources
Dawn Reeder	Rare Earth Science (Consultant to the Applicant)	Principal Biologist	General authorship, mapping
Cassandra Shenk	Consultant to the Applicant	NEPA Specialist	Project Description

CHAPTER 7 – REFERENCES

Armstrong, D.M., J.P. Fitzgerald, and C.A. Meany. 2011. Mammals of Colorado. 2nd Ed. Boulder, Colorado: Univ. Press of Co. 620 pp.

CPW (Colorado Parks and Wildlife). 2025. Public Species Activity Mapping Data Layer accessed in ArcGIS from the ArcGIS online server. Last updated by CPW in January 2025.

CPW. 2020. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors. https://cpw.widencollective.com/assets/share/asset/fqmg4ds76b

Delta County. 2020. Delta County Noxious Weed Management Plan. Adopted April 8, 2020. https://www.deltacounty.com/DocumentCenter/View/1013/Delta-County-2020-Noxious-Weed-Management-Plan?bidId=

EPA (U.S. Environmental Protection Agency). 2025. Current nonattainment counties for all criteria pollutants, updated January 31. https://www3.epa.gov/airquality/greenbook/ancl.html.

ERO (ERO Resources Corporation). 2023. Habitat Loss Assessment: Grandview Canal Middle and Lower Pipeline Project, Delta County Colorado. Prepared for Grandview Canal and Irrigation Company. September 28. 38 pp.

FWS (U.S. Fish and Wildlife Service). 2024. Memorandum re: 2023 Assessment of Sufficient Progress for the Upper Colorado River Endangered Fish Recovery Program in the upper Colorado River basin. https://coloradoriverrecovery.org/uc/wp-content/uploads/sites/2/2024/11/2023-UCRRP-Sufficient-Progress-Memo-and-Supporting-RAP-and-PBO-Reviews_AMMsigned.pdf

FWS 2023. Species status assessment report for *Speyeria nokomis nokomis*, Version 1.1. March 2023. Grand Junction, Colorado. 80 pp.

FWS. 2009. Gunnison Basin Programmatic Biological Opinion. December 4. Memorandum to Area Manager, Western Colorado Area Office, Bureau of Reclamation, Grand Junction, Colorado from Colorado Field Supervisor, Ecological Services, Lakewood, CO. https://coloradoriverrecovery.org/uc/wp-content/uploads/sites/2/2021/09/GUPBO.pdf

George, Jolene (Delta County Assessor). 2023. Personal communication (telephone) with D. Reeder (Rare Earth Science on behalf of Reclamation). April 6.

Hammerson, G.A. 1999. Amphibians & Reptiles in Colorado. 2nd Ed. Boulder: Univ. Press of Colorado. 484 pp.

Henneberg, M.F., 2021, Dissolved-Selenium Concentrations and Loads in the Lower Gunnison River Basin, Colorado, as Part of the Selenium Management Program (ver. 2.0, September 2022): U.S. Geological Survey data release, https://doi.org/10.5066/P92UIS8X.

Kingery, H.E. (Editor). 1998. Colorado Breeding Bird Atlas. Denver: Co. Bird Atlas Partnership & Co. Division of Wildlife. 636 pp.

Linard, J.I., 2013, Ranking contributing areas of salt and selenium in the Lower Gunnison River Basin, Colorado, using multiple linear regression models: U.S. Geological Survey Scientific Investigations Report 2013–5075, 35 p., http://pubs.usgs.gov/sir/2013/5075/

Loving, B. (Montezuma County Noxious Weed Department). 2022. Economic Assessment of Noxious Weeds in Montezuma County. https://montezumacounty.org/wp-content/uploads/2023/02/Economic_Assessment_of_Noxious_Weeds_in_Montezuma_County.pdf

Mohler, C. L. 2001. Weed life history: Identifying vulnerabilities. p. 40–98. In M. Liebman et al. Ecological management of agricultural weeds. Cambridge University Press, New York.

NRCS (U.S. Department of Agriculture Natural Resources Conservation Service). 2022. Gridded Soil Survey Geographic (gSSURGO) for Colorado. USDA GeoSpatial Data Gateway.

Puma, M.J., and B.I. Cook, 2010: Effects of irrigation on global climate during the 20th century. J. Geophys. Res., 115, D16120, doi:10.1029/2010JD014122.

Reclamation (U.S. Bureau of Reclamation). 2025a. Summary of GIS Analysis Noxious Weed, Landcover, and Hydrologic Features, and Estimated Impact from the Proposed Action Alternative for the Grandview Canal Middle Lower Piping Project. March.

Reclamation. 2025b. Threatened & Endangered Species Inventory for the Grandview Canal Middle and Lower Piping Project. Prepared by Rare Earth Science, LLC, for the U.S. Bureau of Reclamation, Environmental Planning Group of the Western Colorado Area Office, Upper Colorado Region. April.

Reclamation. 2022. Selenium Management Program, Gunnison River Basin 2021 Annual Progress Report. Bureau of Reclamation. https://www.usbr.gov/uc/DocLibrary/Reports/SeleniumManagementProgram/20221100-SeleniumManagementProgram-2021Report-508-WCAO.pdf

Reclamation. 2020a. Funding Opportunity Announcement (FOA) No. BOR-UC-20-F001 – Colorado River Basinwide and Basin States Salinity Control Programs – Salt Load Reduction Estimate for the Grandview Canal & Irrigation Co. Extensions, Diversion, Upper Middle & Lower Project. Letter from Kib Jacobson, Colorado River Basin Salinity Control Program Manager to Mark LeValley, President, Grandview Canal & Irrigation Company, from the Upper Colorado Regional Office, Salt Lake City. May 12.

Reclamation. 2020b. Selenium Management Program, Gunnison River Basin 2020 Annual Progress Report. Selenium Management Program, Upper Colorado Basin, Western Colorado Area Office. 41 pp. https://www.usbr.gov/uc/DocLibrary/Reports/SeleniumManagementProgram/20210800-SeleniumManagementProgram-2020Report-508-WCAO.pdf

Reclamation. 2019a. Quality of Water – Colorado River Basin. Progress Report No. 26. https://www.usbr.gov/uc/progact/salinity/pdfs/ProgressReports/20190000-QualityWaterColoradoRiverBasin-ProgressReport26-508-UCRO.pdf

Reclamation. 2019b. Environmental Assessment and Finding of No Significant Impact: Aspen Canal Piping Project. Prepared by the U.S. Dept. of the Interior Bureau of Reclamation, Upper Colorado Region, Wester Colorado Area Office, Grand Junction, Colorado (FONSI signed on 2/27/19). https://www.usbr.gov/uc/envdocs/ea/20190200-AspenCanalPipingProject-FinalEAandFONSI-508-WCAO.pdf

Reclamation. 2019c. Environmental Assessment and Finding of No Significant Impact: Crawford Clipper Ditch Company Clipper Center Lateral Pipeline Project. Prepared by the U.S. Dept. of the Interior Bureau of Reclamation, Upper Colorado Region, Wester Colorado Area Office, Grand Junction, Colorado (WCAO-GJO-FONSI-19-02). https://www.usbr.gov/uc/envdocs/ea/20191000-CrawfordClipperDitchCompanyClipperCenterLateralPipelineProject-FinalEAandFONSI-508-WCAO.pdf

Reclamation. 2019d. Documentation of NEPA Adequacy for Clipper Center Lateral Pipeline Project – Proposed Pipeyard at Spurlin Mesa Road. Prepared by the U.S. Dept. of the Interior Bureau of Reclamation, Upper Colorado Region, Wester Colorado Area Office, Grand Junction, Colorado. December.

Reclamation. 2018. Basinwide Salinity Control Program: Procedures for Habitat Replacement. 14 pp. May.

Reclamation. 2014. Final Environmental Assessment: Clipper Irrigation Salinity Control Project 4, Smith Fork Project, Delta County, Colorado. Prepared for the U.S. Bureau of Reclamation by Rare Earth Science, LLC. https://www.usbr.gov/uc/envdocs/ea/clipperIrrig/final-EA.pdf. FONSI (WCAO-GJ-FONSI-14-01): https://www.usbr.gov/uc/envdocs/ea/clipperIrrig/fonsi.pdf

Reclamation. 2010. Environmental Assessment: Grandview Canal Piping Project. June. 69 pp.

Richards, R.J., Linard, J.I., and Hobza, C.M., 2014, Characterization of salinity loads and selenium loads in the Smith Fork Creek region of the Lower Gunnison River Basin, western Colorado, 2008–2009: U.S. Geological Survey Scientific Investigations Report 2014–5101, 34 p., https://pubs.usgs.gov/sir/2014/5101/pdf/sir2014-5101.pdf

Schaffrath, K.R., 2012, Surface-water salinity in the Gunnison River Basin, Colorado, water years 1989 through 2007: U.S. Geological Survey Scientific Investigations Report 2012–5128, 47 p. https://pubs.usgs.gov/sir/2012/5128/

SMPW (Selenium Management Program Workgroup). 2011. Selenium Management Program: Program Formulation Document, Gunnison River Basin, Colorado. Compiled by U.S. Bureau of Reclamation. http://www.usbr.gov/uc/wcao/progact/smp/docs/Final-SMP-ProgForm.pdf

UKCEH (UK Centre for Ecology & Hydrology). 2023. Derived flow statistics from the National River Flow Archive. UK Centre for Ecology & Hydrology. https://nrfa.ceh.ac.uk/derived-flow-statistics.

USGS (U.S. Geological Survey). 2003. Estimated mean annual natural ground-water recharge in the conterminous United States. U.S. Geological Survey Open-File Report 03-311. Last Updated: August 2021. Accessed on: March 15, 2023. https://water.usgs.gov/lookup/getspatial?rech48grd and raster dataset at https://water.usgs.gov/GIS/metadata/usgswrd/XML/rech48grd.xml

CHAPTER 8 – ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Definition
BLM	U.S. Bureau of Land Management
BMP	Best management practice
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CPW	Colorado Parks and Wildlife
C.R.S.	Colorado Revised Statute
CRSP	Colorado River Storage Project
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	U.S. Endangered Species Act
FOA	Funding Opportunity Announcement
FONSI	Finding of No Significant Impact
FWS	U.S. Fish & Wildlife Service
HDPE	High-density polyethylene
Interior	U.S. Department of the Interior

Abbreviation or Acronym	Definition
mi	mile
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NRHP	National Register of Historic Places
PBO	Programmatic Biological Opinion
PM	Principal meridian
PVC	Polyvinylchloride
RCPP	Regional Conservation Partnership Program
Reclamation	U.S. Bureau of Reclamation (also USBR)
ROW	Right-of-way
SHPO	State Historic Preservation Officer
SMPW	Selenium Management Program Workgroup
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
U.S.C.	United States Code
USDA	U.S. Department of Agriculture

APPENDIX A – SEED LIST

The following certified weed-free seed mix is approved by Reclamation and suitable for uplan, non-irrigated areas. The recommended seeding rate is 40 seeds per square foot, and the pounds of live seed (PLS) per acre are calculated on published data for seeds per pound of the recommended species.

Code	Common Name	Suggested Cultivar	Genus	Species	Mix Proportion	PLS/acre
PASM	Western wheatgrass	X-ARRIBA	*Pascopyrum*	*smithii*	25%	3.5
ELTR	Slender wheatgrass	White River	*Elymus*	*trachycaulus*	25%	3
POSE	Sandburg bluegrass	UP	*Poa*	*secunda*	40%	0.75
POFE	Muttongrass	UP/Ruin Canyon	*Poa*	*fendleriana*	10%	0.2
				TOTAL		**7.45**

APPENDIX B – CULTURAL RESOURCE COMPLIANCE DOCUMENTATION

APPENDIX C – DISTRIBUTION LIST

All landowners adjacent to the Project
Black Hills Energy
Citizens for a Healthy Community
Colorado Department of Transportation
Colorado Office of Archaeology and Historic Preservation
Colorado Parks and Wildlife
Colorado River Water Conservation District
Colorado Water Conservation Board
Crawford Mesa Water Association
Delta Montrose Electric Association
Delta County Commissioners
Delta County Road & Bridge Department
Delta County Planning & Community Development Department
Delta County Independent
TDS Telecom
Southern Ute Indian Tribe
Trout Unlimited
U.S. Army Corps of Engineers
U.S. Bureau of Land Management, Uncompahgre Field Office
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Fish and Wildlife Service
Ute Indian Tribe – Uintah and Ouray Reservation
Ute Mountain Ute Tribe
Western Slope Conservation Center

APPENDIX D – SUMMARY OF HABITAT REPLACEMENT ACCOUNTING FOR SALINITY CONTROL PROJECTS IN THE REGION

Salinity Project	Status	Habitat Units Lost	Habitat Credits Created
Bostwick Park Siphon Lateral Piping Project and Waterdog & Shinn Park Laterals Piping Project	Past	32.1	32.4
C Ditch/Needle Rock	Past	7.88	10.49
Cattleman's Ditch Phases 1 and 2	Past	18.57	23.32
Crawford Clipper – Center Lateral	Past	33.9	38.4 + Excess from previous project
Crawford Clipper - Jerdon, West, & Hamilton	Under Construction	11.6	33.4
Crawford Clipper – Spurlin Mesa (Clipper 4) & Zanni Lateral	Past	16.38	16.49
East Side Laterals – Phase 1	Past	59.85 acres[i]	100 acres
East Side Laterals – Phase 2	Past	26 acres	26 acres
East Side Laterals – Phase 3	Past	8.6	26
East Side Laterals – Phase 4	Past	7.04	Using excess from previous project
East Side Laterals – Phase 5 & GE, DK Laterals	Past	9.99	Using excess from previous project
East Side Laterals – Phase 7[ii]	Past	2.77	41.9

Salinity Project	Status	Habitat Units Lost	Habitat Credits Created
East Side Laterals – Phase 8	Past	22.2	Using excess from previous project
East Side Laterals – Phase 9 & Phase 9 Mod	Past	35.6	31.7+ Excess from previous project
East Side Laterals – Phase 10	Approved	18.7	6.3[iii] + Excess
Fire Mountain Canal	Past	8.42	13.05
Forked Tongue/Holman Ditch	Past	6.7	11.07
Gould Canal – Projects A & B	Past	18.1	24.19
Grandview Canal – Original, Middle & Lower	Past & Current Proposed Project	33.6[iv]	34
Minnesota Ditch – Phase 1	Past	11.17	22.73
Minnesota Ditch – Phase 2 and Minnesota L-75	Past	24.92	17.61 + Excess from previous project
Needle Rock/Lone Rock Ditch	Past	13.9	15.8
North Delta Canal – Phase 1 and Phase I Extension	Past	173.03	174.6
Orchard Ranch Ditch	Past	5.12	5.99
Pilot Rock Ditch	Past	16.9	20.9
Roger's Mesa Slack and Patterson Laterals	Past	20.34	39.93
Short Ditch Extension	Present	13.8	14.1
Stewart Ditch – Upper, Middle & Lower	Past	8.67	9.63
Turner/Lone Cabin Ditch	Approved	117.8	120.3

Salinity Project	Status	Habitat Units Lost	Habitat Credits Created
	TOTAL:	**697.8 units, 85.85 acres**	**784.3 credits, 126 acres**

[i] In late 1990's and early 2000's, the habitat replacement procedures focused on acres rather than credits.
[ii] East Side Laterals – Phase 6 was not a salinity control project, and therefore there is no habitat replacement project associated with that phase.
[iii] As Phase 10 is a potential future project and documentation has not been completed at this time, this figure is an estimate.
[iv] The Middle & Lower Grandview project is the current proposed project. The original Grandview Canal Piping Project resulted in the loss of 26 habitat units and the Middle & Lower is estimated to result in the loss of an additional 7.6 habitat units.